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MICHAEL RODAK, JR.,

IN THE

Supreme Court of the United States

October Term, 1973

No. 73-1590

DYNEX INDUSTRIAL PLASTICS CORP.,

Petitioner,

v.

ANCHOR PLASTICS COMPANY, INC.,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

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IN THE

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October Term, 1973

DYNEX INDUSTRIAL PLASTICS CORP.,
Petitioner,

v.

ANCHOR PLASTICS COMPANY, INC.,
Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

Petitioner, the defendant below, prays that the Court issue a writ of certiorari to review the judgment order of the United States Court of Appeals for the Third Circuit entered February 22, 1974.

Opinions Below

The opinion of the United States District Court for the District of New Jersey (Appendix A to this petition) is reported at 363 F. Supp. 582, 179 U.S.P.Q. 265 (1973). The United States Court of Appeals for the Third Circuit, by judgment order dated February 22, 1974 (Appendix C to this petition), affirmed the judgment of the District Court without opinion. Petitioner's petition for rehearing was denied by the Court of Appeals without opinion.

Jurisdiction

The judgment order of the Court of Appeals was dated and entered on February 22, 1974. The Court of Appeals denied petitioner's petition for rehearing on March 25, 1974. Petitioner invokes the jurisdiction of the Court under 28 U.S.C. § 1254(1).

Questions Presented

I. Contrary to this Court's decision in *Sinclair & Carrol Co., Inc.* v. *Interchemical Corp.*, 325 U.S. 327 (1945), does the selection of a known commercially available material for substitution in an old process in order to achieve the result for which the material selected is known to be especially suited constitute invention under the Patent Laws (35 U.S.C. § 103)?

II. Where, in order to secure allowance of a patent claim to an otherwise old extrusion-lamination process, the applicant characterized as the sole *essential feature* of the process the provision of a lacquer-coated foil and where it is shown that the same lacquer-coated foil had been used in the prior art in a highly analagous sheet-lamination process for heat-seal laminating the same materials at extrusion temperatures, can the claim be held valid?

III. Can an unambiguous patent claim be saved from invalidity because of complete anticipation by a single prior art reference by engrafting additional limitations on the claim language to provide novelty where:

a) the claim language is clear and free from ambiguity,

b) there was no evidence presented that the claim is ambiguous, and

c) the major limitation added to the claim to avoid anticipation and provide novelty is not only

not found in the claim language, it is not even mentioned in the specification of the patent in suit, viz., "hot melt" extrusion?

IV. Can an unambiguous patent claim be saved from invalidity because of inoperativeness by engrafting additional limitations on the claim language, where:

a) the claim language is clear and free from ambiguity,

b) there was no evidence presented that the claim is ambiguous, and

c) the additional limitations are not disclosed in the patent?

Statutes Involved

The questions presented by this petition require interpretation of the Patent Laws, Title 35 U.S.C. §§ 101, 102, 103 and 112, all of which are set forth at length in Appendix E to this petition.

Statement of the Case

The Proceedings Below:

This is a civil action for patent infringement originally brought, in the United States District Court for the District of New Jersey by the respondent, Anchor Plastics Company, Inc. ("Anchor" hereinafter), against the petitioner, Dynex Industrial Plastics Corp. ("Dynex" hereinafter), pursuant to the patent laws of the United States, Title 35 U.S.C., for infringement of United States Letters Patent No. 3,136,676 ("the Fisch patent" hereinafter). Jurisdiction was conferred upon the District Court by Title 28 U.S.C. § 1338(a). After trial, the District Court entered an opinion (Appendix A to this petition) holding the Fisch patent to be valid and infringed by Dynex.

On appeal to the United States Court of Appeals for the Third Circuit, the decision of the District Court was affirmed without opinion by judgment order (Appendix C to this petition) entered February 22, 1974. Upon petition for rehearing to the Court of Appeals, the petition was denied, again without opinion, by order entered March 25, 1974 (Appendix D to this petition). Accordingly, the opinion of the District Court is the only opinion in this case and must be deemed to have been adopted by the Court of Appeals as its own.

The mandate of the Court of Appeals has been stayed pending the filing of this petition.

The Alleged Invention:

The alleged invention claimed in the Fisch patent relates generally to an extrusion-lamination process designed to coat a metal (generally aluminum) foil with a transparent thermoplastic material to produce a variety of shapes of decorative trim strips for application to automobiles, television sets, hair dryers, furniture and other items. The products of the process have a shiny metallic appearance.

Prior to the alleged invention, Anchor and its then sole competitor, "Glass" [1], produced for commercial sale substantial quantities of such trim by extrusion-laminating a transparent thermoplastic material about an uncoated aluminum foil. This prior art process was accomplished by pulling a narrow strip of aluminum foil through the head and die opening of a conventional cross-head extruder while the extruder melted solid transparent thermoplastic material and, at the die opening, coated the moving foil with a layer of the plastic. This is the same way that varicolored plastic-coated telephone wire is produced. The prior art process worked. It produced an attractive

[1] "Glass" refers to Glass Laboratories, Inc., a company owned and run by Jesse and Victor Shanok.

product and hundreds of thousands of dollars worth of the product was sold.

However, the product of the prior art process left something to be desired. The transparent thermoplastic material did not truly laminate to the foil. Adhesion was either non-existent or nonuniform. The products of the prior art process were prone to separations of the plastic from the foil and to "wrinkling" [2] or deformation of the foil. Both separations and wrinkling resulted in visible appearance defects in the extrusion lamination product.

To solve its customer complaint problems related to separation of the extruded plastic from the foil and to wrinkling of the foil during and/or after its extrusion-lamination process Anchor simply selected and substituted in the old extrusion-lamination process a commercially available adhesive lacquer-coated aluminum foil for the previously utilized unlacquered foil. The foil selected, a cellulose nitrate lacquer-coated foil manufactured by Whitaker Paper Company, was one widely known to produce good adhesion of aluminum foil to compatible thermoplastic sheets and films in highly analogous heat-seal sheet-lamination processes conducted at extrusion temperatures.

The result was as expected. The heat-seal lacquer coating adhesively fixed the foil to the extruded thermoplastic material. Separations no longer occurred. The foil and the extruded thermoplastic having become a unitary structure, the foil was not nearly as prone to wrinkle

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[2] In the proceedings below, Dynex asserted that there was no evidence of a "wrinkle" unassociated with a separation and that most, if not all "wrinkles" as well as separations occurred after extrusion and in the hands of customers. For purposes of this petition, however, Dynex does not assert this fact issue, and this Court may assume, arguendo, that "wrinkles" occurred both during and after extrusion and may or may not have always been the result of separations. The fact remains, as found both by the Patent Office Board of Appeals and the District Court and as stated in the Fisch patent, that there were problems of nonadhesion, nonuniform adhesion and separation of plastic from foil in the products of the prior art process.

within the encapsulating thermoplastic layers to which it was adhesively fixed. A true extrusion heat-seal lamination was achieved.

Having discovered through trade channels that Anchor had produced a superior adhesively laminated product, Anchor's then sole competitor, Glass, *promptly and independently* selected a commercially available heat-seal lacquer-coated foil supplied by a different manufacturer, Singen. The same expected result was achieved, a true heat-seal extrusion-lamination of the foil to the extruded thermoplastic material.

The Fisch Patent Claims:

Dynex is held to have infringed claims 1, 2 and 3 of the Fisch patent.[3] In each of the aforementioned claims, two steps are specified in combination:

Step 1 (a selection step): *providing a metal foil having a coating of* a transparent thermoplastic

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[3] Claims 1, 2 and 3 of the Fisch Patent are:

I claim:

1. In the process of preparing extruded thermoplastic products with at least one visible region thereof having a metallic appearance, the steps comprising

providing a metal foil having a thin, film-like coating of a transparent thermoplastic lacquer of the group consisting of cellulose nitrate, cellulose butyrate, ethyl cellulose, and polyvinyl acetate-polyvinyl chloride lacquers on at least one surface thereof,

extruding a transparent thermoplastic material about the lacquer-coated foil while feeding the foil in unison with the thermoplastic material with the surface of the foil containing the lacquer coating contacting the interior surface of the extruded material whereby the lacquer-coating of the foil adhesively fixes the position of the latter with respect to the extruded material.

2. The process as set forth in claim 1 in which the metal foil is an embossed foil containing a multiplicity of facets adapted to reflect light in various directions.

3. The process as set forth in claim 1 in which the metal foil comprises a layer of said thermoplastic lacquer on the surfaces of both sides thereof and in which the thermoplastic material is extruded to contact both lacquer-coated sides of said film.

lacquer of one of four specified types, to wit: *cellulose nitrate, cellulose butyrate, ethyl cellulose* and *polyvinyl acetate-polyvinyl chloride;* and

Step 2 (an extrusion-lamination step): extruding a transparent thermoplastic material about the foil while feeding the foil in contact with the extrudate.

The "whereby" language merely explains the expected result of the process, the problem sought to be solved, to wit: to adhesively fix the foil to the extrudate.

None of the claims is limited to "*hot-melt*" extrusion-lamination. None of the claims is limited to an extrusion-lamination process in which the lacquer-coated foil is passed through the cross-head and die opening of the extruder. Moreover, according to the express wording of the claims, any of the four specified lacquer-coated foils may be adhesively fixed to any extruded thermoplastic material. There was no finding by the District Court that the language of the Fisch patent claims is ambiguous and, indeed, there was no testimony to this effect at trial.

At trial, it was shown by clear and uncontroverted evidence that the unambiguous language of the claims of the Fisch patent overclaim and include a process which will not work to adhesively fix the foil to the extruded material. That inoperative process (a) selects the only transparent thermoplastic lacquer-coated foil which, used by Dynex, was held to have infringed the Fisch patent and (b) extrudes about the lacquer-coated foil the only transparent thermoplastic material identified anywhere in the Fisch patent. The inoperative process would combine a foil coated with polyvinyl acetate-polyvinyl chloride lacquer (the accused foil used by Dynex) with cellulose acetate the only specific extruded thermoplastic material mentioned in the Fisch patent).

The Prior Art:

The prior art relied upon by Dynex with respect to obviousness pursuant to 35 U.S.C. § 103 includes U.S. Patent No. 2,774,811 to Shanok et al. This Shanok '811 patent, which was considered by the Patent Office at the time of allowance of the Fisch patent, completely discloses (Appendix G to this petition, col. 2, lines 16-25) step 2 of the process claimed by Fisch, the extrusion-lamination step, except that an unlacquered foil is employed.

> "In practice it has been found advantageous to utilize a transparent plastic material which is extruded over a ribbon of aluminum foil.... A suitable plastic material for this purpose is cellulose acetate butyrate...."

To complete the prior art anticipation of the Fisch claims for obviousness under 35 U.S.C. § 103, Dynex relies on any one of three prior art publications in combination with the Shanok '811 patent. These publications (Appendices H, I and J), which were not considered by the Patent Office prior to allowance of the Fisch patent, each disclose the selection step 1 of the Fisch claims by teaching the heat-seal lamination of transparent thermoplastic sheeting to aluminum foils coated with one or more of the specific adhesive lacquers named in the Fisch claims.

The prior art Alcoa publication (Appendix H) entitled "*Alcoa Aluminum Foil, Its Properties and Uses*", at page 12 (App. 76a), describes the laminating process of bonding aluminum foil to sheets of transparent thermoplastic material by *heat-sealable adhesive coatings* applied to one or both surfaces of the foil and by bringing the foil into contact with the sheet between *heated* pressure rolls as illustrated in Figure 8, on page 13 (App. 77a), of this publication. The heat-sealing adhesive coatings described on page 17 (App. 81a) of the Alcoa publication include three

of the four adhesives claimed in the Fisch patent as follows:

> "Heat-seal coatings of the *vinyl type* are considered to be the most satisfactory all around materials for use on aluminum foil. Heat-seal coating based on *cellulose nitrate, ethyl celluloses* . . . have also been used satisfactorily on aluminum foil." (Emphasis supplied).

The prior art publication entitled *"Coatings and Coating Methods for Aluminum Foil"* (Appendix I) describes thermoplastic adhesive coatings on aluminum foil for laminating by the application of *heat* and names three of the four thermoplastic adhesive coatings claimed in the Fisch patent. Mr. Robertson, the author, describes these adhesives as follows (App. 93a):

> ". . . The following film formers are used for this type of coating in varying degrees: *nitrocellulose, ethyl cellulose,* vinyl chloride-vinyl acetate-maleic anthydride tripolymer . . . *vinyl chloride-vinyl acetate copolymers,* . . ." (Emphasis supplied).

The prior art publication, *Modern Packaging* (Appendix J), published in 1948, under the heading "Aluminum Foil Laminates", teaches that to bond aluminum foil to other materials, including thermoplastic film, specific adhesives must be selected for the specific foil combination as follows (App. 99a):

> "In laminating plastic films with aluminum foil, . . . This means that the adhesive should be selected for the specific plastic-foil combination to be laminated. For example, *nitrocellulose-type* adhesives find particular application in laminating cellophane and other cellulose films, whereas *vinyl-resin adhesives* have been found quite satisfactory for acetate and certain other types of plastic films. . . ." (Emphasis supplied).

Moreover, Dynex asserts that claim 1 of the Fisch patent is invalid pursuant to 35 U.S.C. § 102 for want of novelty. Each and every element of claim 1, the main and only independent claim of the patent in suit, is disclosed by the prior art United States patent to Nadeau (No. 2,685,511 —Appendix L). This exact correspondence was uncontested and is shown in detail hereinafter. To save the claim from anticipation by the Nadeau prior art patent, to supply novelty the words "hot melt" and "through the extrusion die" were engrafted by the District Court into the clear and unambiguous claim language.

The Nadeau patent discloses the *extrusion* of a transparent thermoplastic material on a metal foil coated with a vinyl chloride-vinyl acetate adhesive, and claim 1 of the patent in suit claims the exact same process. Thus, there is *no* novelty whatsoever in the subject matter as stated in the unambiguous language of claim 1 of the patent in suit.

REASONS FOR GRANTING THE WRIT

I. The Court Should Review the Decision Below Because That Decision is in Conflict with the Prior Decisions of this Court on a Federal Question —Patentability under 35 U.S.C. § 103

As noted in the Statement of the Case, the claims of the Fisch patent which Dynex has been held to have infringed are combination process claims to:

a selection step: *providing a metal foil having a coating of* a transparent thermoplastic lacquer of one of four specified types, to wit: *cellulose nitrate, cellulose butyrate, ethyl cellulose and polyvinyl acetate-polyvinyl chloride;* and

an extrusion-lamination step: extruding a transparent thermoplastic material about the foil while feeding the foil in contact with the extruded thermoplastic material.

The extrusion-lamination step, utilizing an uncoated aluminum foil, was clearly practiced identically in the prior art and is fully disclosed in the Shanok '811 patent (Appendix G, col. 2, lines 16-25). The problem confronting the patentee was how to avoid unsightly separations of the foil from the plastic and wrinkling of the foil. The solution was to adhesively fix the extruded thermoplastic material to the foil. To achieve the solution it was necessary for the patentee to *select* an aluminum foil coated with a suitable heat-sealable adhesive lacquer. Such lacquer-coated foils were widely known and commercially available (Appendix H, p. 81a, Appendix I, p. 93a).

With the problem reduced to the *selection* of suitable, commercially available adhesive lacquer-coated foil to meet the known process and product requirements of providing complete and even adhesion of the foil to the extruded thermoplastic material—a true lamination, this Court's decision in *Sinclair & Carroll Co., Inc.* v. *Interchemical Corp.*, 325 U.S. 327 (1945), clearly indicates the obviousness of Fisch's selection. In that unanimous decision, this Court held that the patentee's selection of a chemical from a catalog as the solvent for a heat-drying ink was not patentable. The Court, at 335, stated:

> "Even assuming that if Gessler had discovered the compound he would be entitled to a patent, he did not discover it. Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put into the last opening in a jig-saw puzzle. It is not invention."

At the trial, Anchor's own expert has testified that the selection of an adhesive was the obvious solution to the delamination problem of Anchor's prior art process.

> "Q. Back in time, 1953, 1954, Dr. Bruins, when there were problems of *delamination* between foils

> and transparent plastic materials the *obvious solution* to these problems were the *addition of adhesives,* were they not? A. Yes, sir". (Emphasis supplied).

Professor Bruins further testified that the very adhesives claimed by Fisch would be the obvious ones to try.

> "Q. Well, let's say at least one skilled in the art would at least try these adhesives, would they not, a vinyl type, a cellulose nitrate or ethyl cellulose adhesive, would they not? A. They would try, and that is evidenced, of course, by the Fisch patent.
>
> Q. And these would be obvious adhesives that one would selection and try, would they not? A. Yes".

In holding that Fisch's selection of a foil coated with a known heat-sealable adhesive lacquer for use in the old extrusion-lamination process of the Shanok '811 patent was unobvious, hence inventive and patentable under the provisions of 35 U.S.C. § 103, the District Court apparently relied heavily on the fact that the selection of the lacquer-coated foil not only expectedly eliminated the problem of separation of the foil from the extruded thermoplastic by adhesively laminating them together, but that it also resulted in the incidental benefit of eliminating wrinkling of the foil. It is submitted that the incidental solution of a wrinkling problem in the course of an obvious attack on a problem of separation due to nonadhesion does not amount to invention.

In accordance with this Court's decision in *General Electric Co.* v. *Jewel Incandescent Lamp Co.,* 326 U.S. 242 (1945), one does not become entitled to a patent by discovering a new *benefit* of a process, but only by discovering an unobvious *process.* The process of the Fisch patent was obvious as a solution to the problem of separation or

delamination due to nonadhesion, and the fact that it might have had the incidental benefit of preventing wrinkling is simply irrelevant.

The law is clear that patents are granted for unobvious processes (methods) and not for the discovery of additional benefits which flow from obvious methods. The Patent Act, 35 U.S.C. § 101 states that a patent may be for ". . . any new and useful process . . .", that is, the Patent Act requires that the process itself be unobvious under 35 U.S.C. § 103.

As stated in *Preuss* v. *General Electric Co., Inc.*, 392 F. 2d 29 (2nd Cir. 1968), *cert. denied*, 393 U.S. 834 (1968), (at F.2d 33-34)

> "A balanced signal/noise ratio also inhered in his solution. If there was, as there was here, an obvious reason for solving the principal feature of a problem, e.g., monophonic compatability on FM stereo, the doing of it does not become nonobvious because incidental values inhered in this solution. *General Electric Co.* v. *Jewel Incandescent Lamp Co.*, 326 U.S. 242, 66 S. Ct. 81, 90L. Ed. 43 (1945)."

The District Court apparently considered each of the heat-seal lamination prior art publications put in evidence by Dynex separately and never considered the *combined* teachings of the prior art Shanok '811 patent and the heat-seal lamination prior art.

The Dynex obviousness argument is based upon combinations of the teachings of the cited prior art Shanok '811 patent (Appendix G) with the prior art of heat-seal lamination utilizing the metal foils coated with the specific claimed adhesive lacquers (Appendices H, I and J). This heat seal lamination prior art disclosing *metal foil coated with the claimed adhesive lacquers* for bonding to thermoplastic materials was *not* before the Patent Office. This is

the *critical* issue in this case. The Patent Office issued the patent in suit because of Fisch's arguments to the Board of Appeals that the *"essential feature"* of the claimed process was the *"lacquer-coated foil"*, Dynex's uncited prior art references fully disclose this *essential feature*, such lacquer-coated foils. Fisch's argument representing the importance of this issue to the Board of Appeals in the "Brief for the Applicant" is as follows:

> "None of the references disclose the *essential feature* of applicant's process or product, the *lacquer-coated foil.*" (Emphasis supplied).

The Patent Office, although it did not become aware of any of the specific heat-seal sheet-lamination art relied upon by Dynex in this case, certainly considered sheet-lamination art as within the scope of the art pertinent to the Fisch patent application. This is evidenced by the Examiner having cited sheet-lamination patents as well as extrusion-lamination patents in the file history of the Fisch patent.

II. The Court Should Review the Decision Below Because That Decision is in Conflict with the Prior Decisions of this Court on a Second Federal Question—Patentability Under 35 U.S.C. § 102

The Courts Have Undermined Patent Certainty By Reading Words Into Unambiguous Claims To Avoid The Prior Art:

A patentee may present any patent claim he chooses to the Patent Office. If he goes beyond the true scope of his invention by *overclaiming* and broadly claims subject matter within the public domain, the claim is invalid under 35 U.S.C. § 102. Only if the claim is ambiguous on its face should there be resort to the specification to save it. Such is the teaching of the decisions of this Court in *Graver Tank and Manufacturing Co., Inc.*, v. *Linde Air Products*

Co., 336 U.S. 271, 277 (1949) which set out the rule to be followed to determine if there was *overclaiming*. In *Graver Tank* the Court set out this rule at page 277:

> "While the cases more often have dealt with efforts to resort to specifications to expand claims, it is clear that the latter fail equally to perform their function as a measure of the grant when they overclaim the invention. *When they do so to the point of invalidity and are free from ambiguity* which might justify resort to the specifications, we agree with the District Court that *they are not to be saved because the latter are less inclusive.*" (Emphasis supplied).

The District Court ignored the above rule set out in *Graver Tank*, and decided to the contrary (Appendix, p. 14a):

> "Nor can I engage in a restricted reading of the claims in suit, as defendant would have me do, so as to ignore that they deal with hot melt extrusion. That this knowledge is drawn from the patent specification and not the bare language of the claims does not vitiate it. As the United States Supreme Court stated in *United States* v. *Adams*, 383 U.S. 39, 49 (1966):
>
> > . . . it is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention. . . ."

Thus, the District Court justified the rewording of claim 1 by the addition of restrictive requirements from the specification to save the claim from its lack of novelty by quoting out of context from *United States* v. *Adams*, 383 U.S. 39, 49 (1966) that "claims are to be construed in the light of the specifications". This quotation from the *Adams* case

did not relate to an analysis of the application of the rules for determination of whether the patent in suit is anticipated under 35 U.S.C. § 102. This is clear from the fact that the cases cited in *Adams* as authority for this statement relate to a determination of the scope of a claim and not to the issue of anticipation under 35 U.S.C. § 102. In addition, the Supreme Court in *Adams, supra,* at page 48, recognizes that "lack of novelty under 35 U.S.C. § 102(a) and obviousness under 35 U.S.C. § 103" are separate tests of patentability. The *Adams* case did not overrule *Graver Tank,* and is not opposed to it.

The process that occurred in this case, in which the District Court rather than the patentee writes the patent claim, is unfair to the public and makes the patent monopoly uncertain. This approach is particularly egregious in this case as not only do the claims fail to mention "hot melt", but this term is not even found in the specification of the patent in suit. Any prior art can be avoided by a skillful rewording of the patent claim by random selection of portions of the specification. An unambiguous claim, as printed in a patent, cannot be relied upon as a court may add new words from the specification. A patent claim's validity cannot be opined upon because the claim may later be changed by a court.

Detail of the Full Anticipation of the Claimed Subject Matter of the Patent in Suit by the Nadeau Prior Art Patent:

The lack of novelty between the process of claim 1 of the patent in suit and the anticipating Nadeau process is shown in the following chart:

Claim 1 of Patent in Suit	Anticipating Nadeau Patent No. 2,685,511 (Appendix L)
Step 1: "In the process of preparing extruded thermoplastic products with at least one visible region thereof having a metallic appearance, *the steps* comprising providing a metal foil having a thin film-like coating of a transparent thermoplastic lacquer of the group consisting of cellulose nitrate, cellulose butyrate, ethyl cellulose and *polyvinyl acetate-polyvinyl chloride* lacquers on at least one surface thereof.	"aluminum foil" (column 7, lines 1-3) is coated with an "interpolymeric resin" containing vinyl chloride-vinyl acetate (column 7, lines 1-7).
Step 2: *extruding a transparent thermoplastic material* about the lacquer-coated foil while feeding the foil in unison with the thermoplastic material with the surface of the foil containing the lacquer coating contacting the interior surface of the extruded material whereby the lacquer-coating of the foil adhesively fixes the position of the latter with respect to the extruded material." (Emphasis supplied).	The coating of transparent thermoplastic material may be cellulose triacetate, cellulose acetate-butyrate, cellulose propionate, cellulose butyrate or cellulose acetate-propionate (column 9, lines 51-57). The actual coating of the transparent thermoplastic can be accomplished by *extrusion* (column 10, lines 9-12). The vinyl chloride-vinyl acetate is the "subbing compound" which acts as an *adhesive*" (column 7, lines 41-48). (Emphasis supplied).

The fact that the claimed process of the Fisch patent lacks novelty was confirmed on cross-examination by plaintiff's expert witness, Professor Bruins, who stated that the Nadeau patent (Appendix L) fully anticipated claim 1 of the patent in suit:

> "Q. In those teachings there in column 7, read in light of the rest of the Nadeau disclosure, do we not have the teaching of the following: The slovent *extrusion* of a solution containing a *thermoplastic material,* namely, cellulose acetate butyrate, *onto a foil, where the foil is precoated with an adhesive consisting of* cellulose acetate—I'm sorry—*polyvinyl acetate and polyvinyl chloride type adhesive,* plus maleic acid. Is that correct, sir? A. I believe what you have stated is correct.
>
> Q. Thank you, Professor Bruins. And then just as a final matter to clarify this matter for the Court, the sensitizing step, that step comes later, does it not? A. Yes." (Emphasis supplied).

The final products produced by Nadeau and the Fisch patent differ. But what is significant here is that the processes are the same, and the claim is for a process and not a product. In addition, it is noteworthy that the final product produced by the Fisch patent and the product produced by Nadeau before his sensitizing step are *identical,* viz., an aluminum foil bonded to the transparent thermoplastic material by the claimed adhesive. For anticipation, it is irrelevant that the end uses of these products are different or that the Nadeau product undergoes further steps so that the Nadeau product produced by the extrusion step, viz., an aluminum foil bonded to a transparent thermoplastic material, is, by other subsequent processes, turned into a photographic plate. The end products of the Fisch patent have many uses and there is no limitation to a particular use.

Dynex agrees that the Nadeau patent relates to solvent extrusion as distinguished from hot-melt extrusion, but claim 1 is not limited to "hot-melt" extrusion. Dynex agrees that the Nadeau patent does not specifically state that the foil goes through the die, but neither does claim 1.

From Nadeau the skilled man learned that to adhere the transparent thermoplastic, namely, cellulose triacetate, to foil, one must use a claimed adhesive. The same problem (lack of adhesion between foil and cellulose triacetate) requires the same solution to the problem (use of the adhesive), regardless of whether the solvent extrusion or hot-melt extrusion is used.

The word "extrusion" in claim 1 is used broadly to give the claim a meaning and range beyond the specific details of the disclosure. It is axiomatic in patent law that the words of a claim are not limited to the specific details of the patent specification. Thus the term "extrusion" is not ambiguous[4]; it is merely broad and covers both the hot-melt extrusion of the Fisch patent and Nadeau's solvent extrusion. The Fisch patent itself states "it is accordingly desired that the appended claims not be limited to any specific features or details thereof" (Appendix F, col. 4, lines 73-75, col. 5, lines 1-3). No expert testified that claim 1 was "ambiguous"; but, in determining whether a prior art reference is an anticipation, the meaning of words in a claim is not determined by the opinion of experts. It is a question of law for the court. *Minnesota Mining & Mfg. Co.* v. *Carborundum Co.*, 155 F.2d 746, 749 (3rd Cir. 1946); *Methode Electronics, Inc.* v. *Elco Corporation*, 385 F.2d 138, 140 (3rd Cir. 1967).

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[4] See Webster's International Dictionary, 2nd Edition, page 904

III. The Court Should Review the Decision Below Because that Decision is in Conflict with the Prior Decisions of this Court on Yet a Third Federal Question—Validity of Patent Claims under 35 U.S.C. § 112 and Because there is a Conflict Between the Circuits on this Point

The Courts Have Undermined Patent Certainty By Reading Words Into Unambiguous Claims To Avoid Inoperative Embodiments:

A patentee can limit his claims, when he presents them to the Patent Office, to his actual invention—to those things he knows will work. If he overreaches and he claims more—and includes within his claim that which will not work, he should suffer the consequence of the claim being held invalid. And especially in this case, because not only will something within the claim not work—but the exact materials taught by the specification will not work.

This Court made it clear, in *Graver Tank, supra,* that inoperative embodiments that are within the claim make the claim invalid. The *Graver Tank* case has been followed and was preceded by cases holding that patents are invalid because inoperative products or processes were within the claims, but not named in the specification, such cases including *General Electric Co.* v. *Wabash Appliance Corp.,* 304 U.S. 364, 373-374 (1938); *Aluminum Co. of America* v. *Thompson Products, Inc.,* 122 F.2d 796, 798 (6th Cir. 1941); *Holland Furniture Co.* v. *Perkins Glue Co.,* 277 U.S. 245, 256-257 (1928); *Corona Cord Tire Co.* v. *Dovan Chem. Corp.,* 276 U.S. 358, 385 (1928); *The Incandescent Lamp Patent,* 159 U.S. 465, 472-476 (1895); *Matheson* v. *Campbell,* 78 F. 910 922 (2nd Cir. 1897). Cases decided after the enactment of the 1954 Patent Act include: *Georgia-Pacific Corp.* v. *United States Plywood Corp.,* 258 F.2d 124, 135 (2nd Cir. 1958); *Borg-Warner Corp.* v. *Mall Tool Co.,*

217 F.2d 850, 856 (7th Cir., 1954); *Shelco, Inc.* v. *Dow Chemical Company,* 322 F.S. 485, 509, 510 (D.C. Ill. 1970): and *H. C. Baxter & Bro.* v. *Great Atlantic & Pacific Tea Co.,* 236 F.S. 601, 614 (D.C. Maine 1964). For the importance of requiring that claims be definite see *Halliburton Co.* v. *Walker,* 329 U.S. 1, 10 (1946).

But other Courts, including the Third Circuit in the present case, have heard a different drummer. They rewrite unambiguous patent claims, after grant of the patent, to exclude inoperative embodiments. Such cases are: *Ansul Company* v. *Uniroyal Inc.,* 301 F.S. 273, 288 (S.D. N.Y. 1969), aff'd, 488 F.2d 872, 878 (2nd Cir. 1971); *Noll* v. *O. M. Scott & Sons Co.,* 467 F.2d 295 (6th Cir. 1972) cert. den. 411 U.S. 965 and *Yosemite Chemical Co.* v. *United States,* 360 F.2d 948, 952 (Ct.Claims 1966). For a horrendous example of this practice, one need only look at the present case.

The patent in suit claims "a thermoplastic material" which is extruded over an adhesive-coated foil. The only specific "thermoplastic material" mentioned in the patent is "cellulose acetate", which is mentioned once (Appendix F, col. 3, line 25). The adhesive used with it is "cellulose nitrate" (Appendix F, col. 3, lines 26-27).

The patent claim specifies four adhesives, "cellulose nitrate, cellulose butyrate, ethyl cellulose, and polyvinyl acetate-polyvinyl chloride lacquers". Anchor accuses Dynex based only upon Dynex's use of "polyvinyl acetate-polyvinyl chloride", the other adhesives including cellulose nitrate, being irrelevant to the infringement charge.

But cellulose acetate (the only extruded transparent thermoplastic mentioned in the patent) *will not work* with the "polyvinyl acetate—polyvinyl chloride" adhesive. Uncontested testimony showed that there was no adhesion between the adhesive lacquer-coated foil (coated with polyvinyl acetate—polyvinyl chloride") and extruded cellulose acetate.

Dynex does not use cellulose acetate (the only extruded material specified in the patent); rather, it conventionally extrudes "cellulose acetate butyrate", which sounds like "cellulose acetate" but is a far different material chemically. Anchor's expert admitted the product was unsatisfactory.

The testimony by Dynex's expert was simple, supported by documentary evidence, and uncontroverted. It was (1) that the foil was coated with polyvinyl acetate—polyvinyl chloride lacquer, (2) that cellulose acetate was extruded on the lacquer-coated foil, and (3) that the product was unsatisfactory because the foil and extruded plastic did not adhere. This nonadherence was admitted by Anchor's expert, Professor Bruins.

The District Court made *no finding* as to operativeness of the cellulose acetate—VMCH combination.

Anchor below sought to evade this issue by pretending that the question is, "Does the patent teach *an* operative embodiment?"—an issue not here raised. Dynex freely admits that a skilled man, reading the patent disclosure, could successfully operate and do so without undue experimentation. To succeed he could choose cellulose nitrate lacquer and use it with the cellulose acetate thermoplastic. But such success with cellulose nitrate and lack of required experimentation is irrelevant, because Dynex never used cellulose nitrate lacquer—it uses "VMCH" (based upon polyvinyl acetate—polyvinyl chloride). It is not fair that Dynex should be held liable for using "VMCH"—when it will not work with cellulose acetate—the only extruded thermoplastic taught by the patent.

IV. CONCLUSION

For the foregoing reasons, a writ of certiorari should issue to the Court of Appeals for the Third Circuit.

Respectfully submitted,

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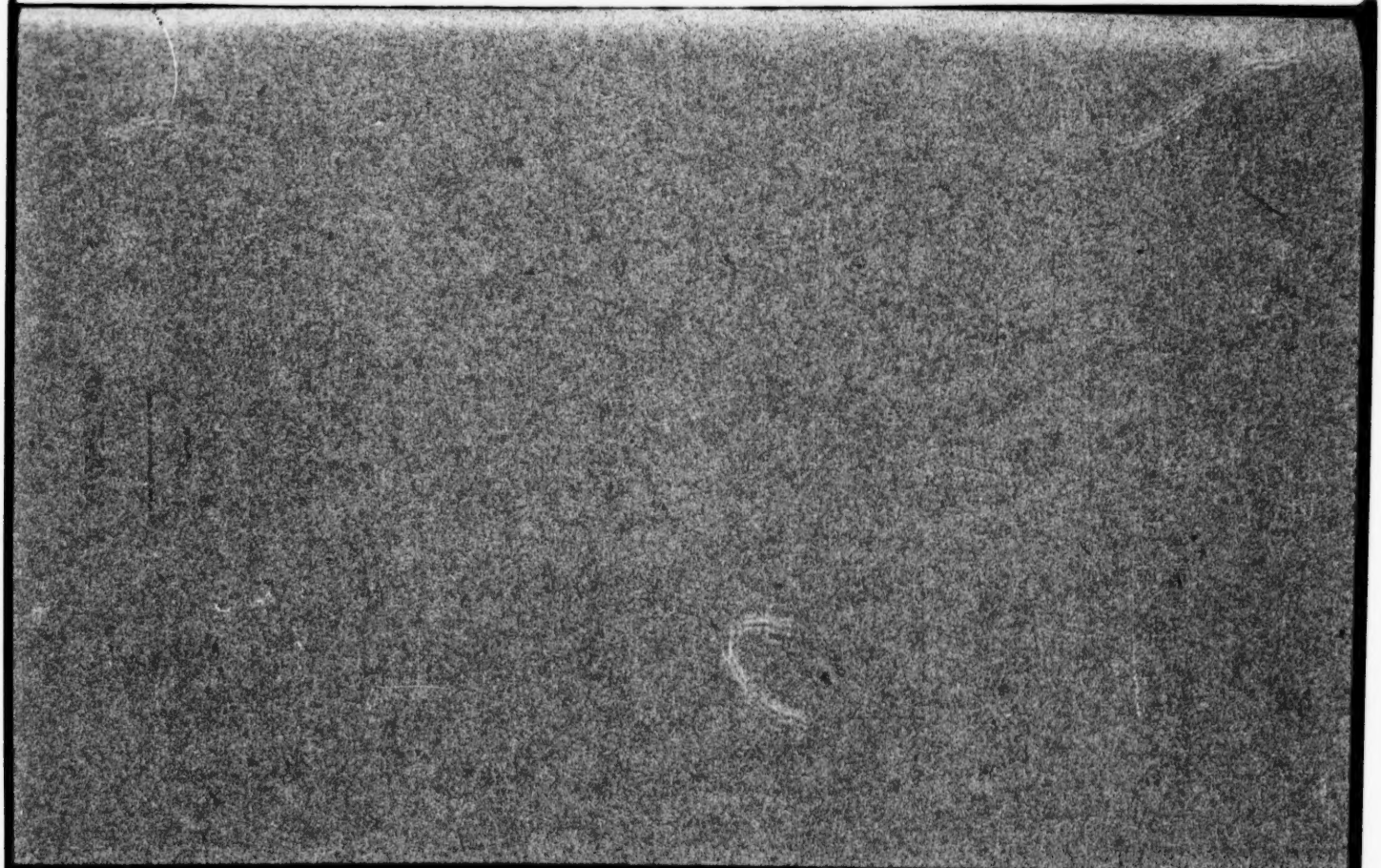
April 23, 1974

APPENDICES



APPENDIX A

Opinion

UNITED STATES DISTRICT COURT

DISTRICT OF NEW JERSEY

Civil Action No. 1495-69

ANCHOR PLASTICS COMPANY, INC.,

Plaintiff,

v.

DYNEX INDUSTRIAL PLASTICS CORP.,

Defendant.

Appearances:

PITNEY, HARDIN & KIPP, Esqs. By: WILLIAM H. HYATT, JR., Esq.

MORGAN, FINNEGAN, DURHAM & PINE, Esqs. By: JEROME G. LEE, Esq. (N.Y.), JAMES P. WELCH, Esq. (N.Y.), Attorneys for plaintiff.

POPPER, BAIN, BOBIS, GILFILLAN & RHODES, Esqs. By: JOHN G. GILFILLAN III, Esq.

WYATT, GERBER & SHOUP, Esqs. By: DOUGLAS W. WYATT, Esq. (N.Y.), ELIOT S. GERBER, Esq. (N.Y.), Attorneys for defendant.

LACEY, *District Judge:*

This is an action for infringement by the assignee of United States Patent No. 3,136,676 (hereinafter called the

Fisch patent), issued on June 9, 1964, for "Metallized Plastic Extrusion Products and Method of Making Same," on an application filed in the United States Patent Office on February 20, 1957.[1]

Plaintiff Anchor Plastics Company, Inc. (Anchor) is a New York corporation, having its principal place of business in Long Island City, New York.

Defendant Dynex Industrial Plastics Corp. (Dynex) is a New Jersey corporation doing business within the District of New Jersey in Rutherford, New Jersey.

This action presents the primary issues of validity and infringement. Plaintiff seeks by way of relief an injunction against continuance of alleged infringement, damages, interest, and costs.

Defendant's answer denies infringement of the Fisch patent, denies its validity, and sets forth numerous affirmative defenses. Defendant asserts no counterclaim.

Subject matter jurisdiction is had over this action by virtue of 28 U.S.C. § 1338(a), and venue is proper under 28 U.S.C. § 1400(b).

Plaintiff is in the business of making and selling plastic extrusion products and, in such business, uses the process described and claimed in the Fisch patent in suit.

This matter was tried before me over 7 trial days, following which the parties submitted post-trial briefs and proposed findings of facts and conclusions of law.

The opinion which follows embodies my own findings of fact and conclusions of law pursuant to Fed.R.Civ.P. 52(a).

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[1] References herein to exhibits and testimony will be as follows:
Plaintiff's Exhibits will be identified as PX——;
Defendant's Exhibits will be identified as DX——;
The trial transcript will be referred to by the witness and page number, e.g. —— Tr. ——;
The patent in suit is PX 1.

Appendix A

The Patent in Suit

The Fisch patent was issued on June 9, 1964, and relates to the production of metallized effects in extruded transparent thermoplastic products. It is a process patent. 35 U.S.C. §§ 100, 101.

The thermoplastic extrusion process of the invention produces a decorative trim or strip, having a metal foil, such as aluminum, encased in a transparent thermoplastic. The product is in widespread use as trim on automobiles, home appliances and the like, and as decorative trim on cabinets where, because of a bend in the trim around a particular radius, an all metal trim could not be used because of buckling.

In the thermoplastic extrusion process of the invention, a molten thermoplastic material and a metal foil, having been introduced into an extrusion apparatus, are forced through a die. The thermoplastic material is melted to a molten state at high temperature so that it is in a fluid condition capable of being forced through the die. The extrusion emerges from the die with the metal object encased in the plastic. Then it is cooled, which apparently solidifies, sets or hardens the thermoplastic material. The extrusion has the cross-sectional shape of the die opening. Insofar as these elements are concerned, plaintiff concedes anticipation and non-obviousness in view of the prior art (See PX-1, Col. 1 as to the extrusion process and Col. 2 as to the extrusion apparatus).

Thus, prior to filing of the Fisch patent application, such extrusions of plastic strips with metal foil encased therein were being produced and sold. Plaintiff contends, however, that the resultant product had substantial defects, in that, with bending and outdoor exposure, there occurred wrinkling and distortion of the metal foil within the plastic, and I so find.

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For a year and a half, plaintiff's employees tried without success to solve the problem, until, by the process of the Fisch patent, the wrinkling of the foil was eliminated. The foil used in the patented process is pre-coated on at least one of its surfaces with a thin, film-like coating of a transparent thermoplastic lacquer of the group consisting of cellulose nitrate, cellulose butyrate, ethyl cellulose and polyvinyl acetate-polyvinyl chloride lacquers. This lacquer coated foil is fed into a die in unison with the thermoplastic material and the transparent thermoplastic material is extruded about the lacquer coated foil. The surface of the foil containing the lacquer coating contacts the interior surface of the extruded material and the lacquer coating on the foil adhesively fixes the position of the foil with respect to the extruded transparent thermoplastic material.

Plaintiff's use of the process, to extrude and make products with a lacquer coated foil, resulted in the cessation of complaints from customers that the foil was wrinkling and the products were discoloring.

The Fisch patent contains 5 Claims; and Claims 1, 2, and 3 are charged to be infringed by defendant's process. They are as follows:

> 1. In the process of preparing extruded thermoplastic products with at least one visible region thereof having a metallic appearance, the steps comprising
>
> providing a metal foil having a thin, film-like coating of a transparent thermoplastic lacquer of the group consisting of cellulose nitrate, cellulose butyrate, ethyl cellulose, and polyvinyl acetate-polyvinyl chloride lacquers on at least one surface thereof.

extruding a transparent thermoplastic material about the lacquer-coated foil while feeding the foil in unison with the thermoplastic material with the surface of the foil containing the lacquer coating contacting the interior surface of the extruded material whereby the lacquer-coating of the foil adhesively fixes the position of the latter with respect to the extruded material.

2. The process as set forth in claim 1 in which the metal foil is an embossed foil containing a multiplicity of facets adapted to reflect light in various directions.

3. The process as set forth in claim 1 in which the metal foil comprises a layer of said thermoplastic lacquer on the surfaces of both sides thereof and in which the thermoplastic material is extruded to contact both lacquer-coated sides of said film.

As can readily be seen, Claims 2 and 3 are actually dependent upon Claim 1. In addition to the recitations of Claim 1, Claim 2 recites that the foil is embossed. Claim 3, in addition to the recitations of Claim 1, recites that the foil is coated on both sides with the lacquer and that the thermoplastic material is extruded to contact both sides of the foil.

In summary, it can thus be said that involved herein are two technologies, both of which, plaintiff concedes, were known and used before its invention. These two technologies are combined by the Fisch patent to provide a process of preparing extruded thermoplastic products with at least one visible region thereof having a metallic appearance. The first of said technologies is the extrusion of thermoplastic materials. These materials, when heated,

become plastic or soft, and can be molded or shaped into desired configurations; and, when cooled, are capable of hardening and being fixed in the desired molded configuration. These thermoplastic materials, when heated and soft, can be extruded or forced through an extrusion die and, when so extruded and then cooled, are capable of hardening and being fixed in the shape formed by the extrusion or extrusion die. The second of the technologies, brought together with the first, and combined to provide the process of the invention of the Fisch patent, it the coating of a surface with a lacquer. Plaintiff acknowledges that the technology of applying thin, film-like coatings of lacquers to surfaces, including metal surfaces, was known prior to the invention of the Fisch patent.

In combining the technology of the extrusion of thermoplastic materials with the technology of applying thin, film-like coatings of lacquers to surfaces, Fisch discovered that, to accomplish the purposes of the patent, including avoiding of wrinkling, particular lacquer coatings on one or more of the surfaces of the metal foil should be used. Thus, the patent prescribes that the lacquer should be a "thermoplastic adhesive" (Patent, Col. 1); "must be one which is capable of absorbing or overcoming the non-adhesive effects of the lubricant film" on the foil (Patent, Col. 2); "Very satisfactory adhesives which act as adhesives between the foil and plastic in spite of the residual lubricant or oil on the foil are lacquers with a nitrocellulose base. Cellulose butyrate lacquers and vinyl acetate-vinyl chloride copolymer lacquers are also satisfactory" (Patent, Col. 2); "The foil 21-5 is coated with a thin layer of adhesive lacquer 26-5 which may have a base of cellulose butyrate, cellulose nitrate, ethyl cellulose, polyvinyl acetate-polyvinyl chloride" (Patent, Col. 3).

For a better understanding of the issues, defendant's position, to be analyzed hereinafter in association with its

proffered prior art, should be stated now. Defendant argues (Def's Post-Trial Brief, pp. 17-18):

> In essence, claim 1 of the suit patent is a *combination claim* for a process for preparing extruded thermoplastic products by a combination of the following two steps: *Combination Step 1: Providing a metal foil having* a thin film-like *coating* of a transparent thermoplastic *adhesive lacquer* including cellulose nitrate, ethyl cellulose or polyvinyl acetate—polyvinyl chloride lacquers. *Combination Step 2: Extruding a transparent thermoplastic material about the adhesive lacquer coated foil feeding* the foil in unison with the thermoplastic material so that the lacquer adhesively affixes the foil to the thermoplastic material.
>
> The only difference between the disclosure of the prior art Shanok patent (DX-Q) and the two steps of the process of combination claim 1 in the suit patent is that the *selected* metal foil *provided* is coated with specified adhesives lacquers prior to the extrusion step (PX-6 A, B and C; Bruins Tr. 303-305, 407; Skeist Tr. 642, 648). Further, Step 1 is not a process step but instead is a *selection* step to provide a metal foil precoated with certain adhesive lacquers for use in the claimed process.
>
> Metal foil coated with the identical adhesive lacquers set out in claim 1 were conventional commercial products prior to the filing of the application for the patent in suit (DX-X, DX-Z, DX-BV; Skeist Tr. 630-631). In addition, ethyl cellulose, cellulose nitrate and vinyl acetate—vinyl chloride copolymers were well-known conventional commercial adhesives and known in the prior art for use in bonding metal foil to transparent thermoplastic material (Bruins Tr. 300-302, 336-337; Skeist Tr. 628-629, 685-688).

> Thus, the record is clear that there is no new element or step in combination claim 1 of the patent in suit. [Emphasis in original]

As to Claims 2 and 3 defendant contends (Def's. Post-Trial Brief, p. 27):

> Combination claim 2 adds the limitation of the use of an embossed foil to the subject matter of the combination claim 1 and combination claim 3 adds the limitation of the use of the adhesive lacquer on both sides of the foil to the subject matter of combination claim 1. The record is devoid of any evidence that the use of embossed foil or foil with lacquer on both sides adds anything of patentable significance to the subject matter of claim 1.

Defendant then concludes the statement of its position (Def's. Post-Trial Brief, p. 27):

> Accordingly, as the selection of the named adhesive lacquers for coating foil for use in the process of the Shanok patent (DX-Q) would be an obvious solution to the problem of separation or delamination in the product, and as no new result or function is achieved, claims 1, 2 and 3 are invalid for obviousness.

Defendant's division of the Fisch patented process into two steps is consistent with plaintiff's positon. *See* Pff's. Proposed Findings of Fact and Conclusions of Law 22:

> The invention of the patent in suit solved the wrinkling problem by the process of providing a metal foil having a thin, film-like coating of a particular transparent thermoplastic lacquer. In the second step of the process, the transparent ther-

moplastic material is extruded in unison with the lacquer coated foil (Rothman Tr. 112).

Validity of the Patent

Defendant contends the patent in suit is invalid for the following principal reasons:

1. Because the process of the patent is not new in light of the prior art, under 35 U.S.C. § 102.

2. Because the differences between the subject matter of the invention and the prior art are such that the subject matter as a whole would have been "obvious" at the time the invention was made to a person having ordinary skill in the art to which the subject matter of the invention pertains, under 35 U.S.C. § 103.

3. Because the patent in suit does not adequately disclose how to make and use the invention, under 35 U.S.C. § 112.

Other reasons are also advanced and will be discussed herein as appropriate.

Presumption of Validity

Section 282 of 35 U.S.C. provides:

> A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it.

The burden of overcoming the presumption of validity is a substantial one. As noted in *Trio Process Corp.* v. *L. Goldstein's Sons, Inc.*, 461 F.2d 66, 70 (3d Cir.), *cert. denied*, 409 U.S. 997 (1972):

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Congress provided in 35 U.S.C. § 282 (1970), that: "A patent shall be presumed valid. *** The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting it." And this Court has recognized that "* * * the burden of proving invalidity in the face of the presumption is a heavy one." Schmidinger v. Welsh, 383 F.2d 455, 462 n. 10 (3d Cir. 1967); cert. denied, 390 U.S. 946, 88 S.Ct. 1031, 19 L.Ed.2d 1134 (1968). Indeed, invalidity must be demonstrated by clear and convincing proof, Ever-Wear Inc. v. Weiboldt Stores, Inc., 427 F.2d 373 (7th Cir. 1970); General Foods Corp. v. Perk Foods Co., 419 F.2d 944 (7th Cir. 1969), cert. denied, 397 U.S. 1038, 90 S.Ct. 1537, 25 L.Ed.2d 649 (1970); Moon v. Cabot Shops, Inc., 270 F.2d 539 (9th Cir. 1959), cert. denied, 361 U.S. 965, 80 S.Ct. 596, 4 L.Ed.2d 546 (1960).[2]

Plaintiff claims this presumption is particularly strong in that, while the Patent Office Examiner considered and

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[2] In Carter-Wallace Inc. v. Davis-Edwards Pharmacal Corp. 443 F.2d 867, 871 n. 4 (2d Cir. 1971) it was stated:

> The presumption of validity accorded a patent regularly issued, referred to in the quoted passage and long recognized in judicial precedent, see, e.g., Radio Corp. of America v. Radio Engineering Laboratories, Inc. 293 U.S. 1, 7-8, 55 S.Ct. 928, 79 L.Ed. 634 (1934), was codified in 1952, 35 U.S.C. § 282. The Reviser's Note states: "The first paragraph declares the existing presumption of validity of patents." We have recently noted that the presumption "has no independent evidentiary value; rather, it serves to place the burden of proof on the person who asserts invalidity. Reasonable doubt on the issue of validity must be resolved in favor of the patent holder, but in the usual case a preponderance of the evidence determines the issue." Rains v. Niaqua, Inc., 406 F.2d 275, 278 (2 Cir), cert. denied, 395 U.S. 909, 89 S.Ct. 1751, 23 L.Ed.2d 222 (1969).

applied each of defendant's theories of prior art obviousness, the patent was ultimately granted by the unanimous decision of three senior Examiners constituting the Board of Appeals (*See* PX-3). Since the Board of Appeals is the highest examining tribunal of the Patent Office, plaintiff argues that its action thus strengthens the presumption of validity, citing *Otto* v. *Koppers Co.*, 246 F.2d 789, 800-01 (4th Cir. 1957), *cert. denied*, 355 U.S. 939 (1958).[3]

On the other hand, it is well settled that the presumption of validity does not exist if, as defendant argues was here the case, there is shown to have been appropriate

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[3] Plaintiff also points out that one of the members of the Board of Appeals who granted the patent in suit was P. J. Frederico, "a recognized authority, whose Commentary On The New Patent Act is the official preface appearing in Volume 35 of United States Code Annotated." Pff's Post-Trial Brief, p. 11.

Actually, as the File Wrapper discloses, the application for the patent in suit was filed on February 20, 1957, and was rejected by the Examiner on four separate occasions, culminating in a final rejection dated May 25, 1961 (PX-3, pp. 19, 25, 32 and 51). On appeal to the Patent Office Board of Appeals, only two prior art references were relied on to support the Examiner's rejection, namely, the Shanok patent (PX-3, p. 83 and DX-Q) No. 2,774,811 and the Chadbourne patent (PX-4M and DX-N) No. 2,669,754; however, in the four rejections at least twenty prior art references had been considered. In the decision of the Board of Appeals the only references considered were the Chadbourne and Shanok references.

The Board of Appeals allowed the application for the patent in suit over the Examiner's rejection because the references relied on did not disclose the use of a lacquer coated foil as follows (PX-3):

> Claims 2 and 11 to 14, directed to the process, stand rejected as being unpatentable over Shanok et al. in view of Chadbourne. We have carefully considered the Examiner's views, but we will not sustain this rejection. Neither one of these references nor their combination discloses extruding a thermoplastic material about a lacquer coated foil for the purpose of solving the problem of non-uniform adhesion and wrinkling.

prior art references which were not considered by the Patent Office. *Hadco Products Inc.* v. *Walter Kidde & Co.*, 462 F.2d 1265, 1272 n. 33 (3d Cir.), *cert. denied*, 409 U.S. 1023 (1972); *Philips Electronic and Pharmaceutical Industries Corp.* v. *Thermal and Electronics Industries, Inc.*, 450 F.2d 1164, 1176 (3d Cir. 1971); *T. P. Laboratories, Inc.* v. *Huge*, 371 F.2d 231, 234 (7th Cir. 1966); *cf. Hunt* v. *Armour & Co.*, 185 F.2d 722 (7th Cir. 1951).

It is against the background of these pertinent principles that the validity issue will now be considered.

Novelty

I shall deal first with the question of novelty. Title 35 U.S.C. § 102 provides:

> A person shall be entitled to a patent unless—
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
>
> • • •
>
> (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Appendix A

For the defense of lack of novelty under 35 U.S.C. § 102 to prevail, the claimed invention must be disclosed within the four corners of a single prior art patent or other single piece of prior art. *Package Devices, Inc.* v. *Sun Ray Drug Co.*, 432 F.2d 272, 275 (3d Cir. 1970), *cert. denied*, 401 U.S. 956 (1971); *Ling-Temco-Vought, Inc.* v. *Kollsman Instrument Corp.*, 372 F.2d 263 (2d Cir. 1967); *Skelly Oil Co.* v. *Universal Oil Products Co.*, 31 F.2d 427 (3d Cir. 1929); *cf. St. Regis Paper Co.* v. *Tee-Pac, Inc.*, 352 F.Supp. 309 (N.D. Ohio 1973).

The only prior art reference asserted by defendant in support of its § 102 defense is the Nadeau patent (DX-A1), issued on August 3, 1954, on an application filed May 3, 1952. The Fisch patent process is a hot melt extrusion process, and, I find, plainly different from that of Nadeau. In Fisch, as has been stated, the thermoplastic material is heated, melted and forced through the extruder die in unison with lacquered aluminum foil. The aluminum foil goes through the die opening along with the hot thermoplastic. The temperature of the hot, melted thermoplastic, as it is fed through the die, is about 400° F.; and, after leaving the die, the melted thermoplastic, with the foil embedded therein, is quenched and cooled to room temperature.

The Nadeau patent process, which was not before the Patent Office, is directed to the preparation of a photographic printing plate involving the coating of various layers of material on a plate of aluminum followed by acid treatment, etching and sensitizing of the photographic surface, for use in a printing press.

Nadeau says little of extrusion. In Column 10 of the patent, Nadeau refers to various techniques that can be employed at room temperature for applying the coatings to his aluminum plate, and, in addition to room temperature spraying and dipping, Nadeau mentions extrusions. The

testimony persuades me that the extrusion was vastly different from that of the Fisch patent. Thus, I accept the testimony of plaintiff's expert, Professor Bruins, that the Nadeau patent was concerned with solvent extrusion at room temperature to lay down a coating; that Nadeau means "not molten extrusion, but merely toothpaste, room temperature extrusion"; and that the aluminum foil in the process of the Nadeau patent does not go through the die head of the extruder.

Nor can I engage in a restricted reading of the claims in suit, as defendant would have me do, so as to ignore that they deal with hot melt extrusion. That this knowledge is drawn from the patent specification and not the bare language of the claims does not vitiate it. As the United States Supreme Court stated in *United States* v. *Adams*, 383 U.S. 39, 49 (1966):

> . . . it is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention . . . .

Accordingly, I find that the prior art Nadeau patent does not within its four corners disclose the process invention of the patent in suit, and that said invention was not anticipated under § 102.

Obviousness

Defendant argues that the Claims 1, 2 and 3 are invalid for obviousness. Section 103 of Title 35 provides in pertinent part:

> A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which said subject matter pertains. . . .

In *Trio Process, supra,* 461 F.2d at 70-1 Judge Adams discussed the *Graham* v. *John Deere* prescription for determining obviousness, and its application, as follows:

> Although Section 103 was enacted in 1952, it was not until 1966 that the Supreme Court definitely construed it in a trilogy of cases. *Graham* v. *John Deere Co.,* 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed. 2d 545 (1966); *Calmar, Inc.* (Colgate-palmolive Co.) v. *Cook Chemical Co., id.; United States* v. *Adams,* 383 U.S. 39, 86 S.Ct. 708, 15 L.Ed. 2d 572 (1966). In *Graham,* the Supreme Court set forth the primary tests and secondary criteria for determining obviousness:
>
> > "[T]he scope and content of the prior art * * *; differences between the prior art and the claims at issue * * *; and the level of ordinary skill in the pertinent art * * *. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." 383 U.S. at 17, 86 S.Ct. at 694. [footnote omitted]

It is thus incumbent upon the trial court to consider the three primary tests of obviousness and make the requisite findings. *Trio Process, supra,* 461 F.2d at 71. The "secondary considerations" may or may not require evaluation.

It is not without significance that at issue here is a combination patent. In *Hadco Products, Inc.* v. *Walter Kidde & Co., supra,* dealing with a design combination patent, Judge Forman wrote (462 F.2d at 1269):

> . . . Under § 103 it must be determined that the differences between the prior art and the subject matter

> of the patent are nonobvious to a worker of ordinary skill to justify the issuance of a patent. The courts are bound to a "strict observance" of this rigorous standard.
>
> Where, as in the present case, a combination patent is involved, additional aspects of non-obviousness come into play. The court must "scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements." Such a patent must create a synergistic effect, one in which the combination of elements results in an effect greater than the sum of the several effects taken separately." [footnotes omitted]

As to the "rigorous standard" referred to, the opinion stated (462 F.2d at 1269 n. 17):

> . . . This standard, of course, neither diminishes the presumption of validity which attaches to a patent . . . nor lessens the burden of the party challenging a patent to prove its invalidity. . . .

As to the "combination" rule, it is noted that in the same term as *Graham,* the Supreme Court found a combination patent for a battery was nonobvious because it produced "unexpected" results. *United States* v. *Adams,* 383 U.S. 39, 51 (1966). *See also Henkels & McCoy, Inc.* v. *Elkin,* 455 F.2d 936 (3d Cir. 1972); *Devex Corp.* v. *General Motors Corp.,* 467 F.2d 257, 258 n. 2 (3d Cir. 1972), *petition for cert. filed,* 41 U.S.L.W. 3592 (U.S. May 18, 1973) (No. 72-1161):

> It is familiar learning that in the combining of old and familiar elements the achievement of an unexpected result is needed and may suffice to make the combination patentable. . . .

See also, for application of the "combination" rule to process patents, *Sperti Products, Inc.* v. *Coca-Cola Co.,* 339 F.2d 607, 609 (3d Cir. 1968); *Southwest Products Co.* v. *Heim Universal Corp.,* 443 F.2d 621, 624 (2d Cir. 1971); *Proler Steel Corp.* v. *Luria Brothers & Co.,* 417 F.2d 272, 278 (9th Cir. 1969).[4]

Prior Art

In *Trio Process Corporation* v. *L. Goldstein's Sons, Inc., supra,* Judge Adams wrote (461 F.2d at 69 n. 3):

Prior art has been defined as follows:

> "The existing state of knowledge in a particular art at the time an invention is made. It includes the issued patents, * * * publications, and all other knowledge deemed to be common thereto such as trade skills, trade practices, and the like, A. Smith, Patent Law Cases, Comments and Materials 2 (1964)."

See also Graham v. *John Deere Co., Supra,* 383 U.S. at 35.

The prior art must be examined against the following background: Plaintiff combined two processes, both of which were admittedly known, that is, thermoplastic extrusion and lacquer coating of aluminum foil. Additionally,

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[4] Judge Forman, in *Hadco* (462 F.2d at 1274 n. 47), stated:

"In the recent case of Trio Process Corp. v. L. Goldstein's Sons, Inc. . . . clearly distinguishable from the present case, this court sustained a process patent which consisted of a combination of steps known in the art, reasoning that, "the essence of the Spitz invention did not lie in the individual steps, but rather, consisted of combining the steps in an unsuggested manner into a process that would achieve a substantially different function and result from the other processes of which the individual stages were a part. (footnote omitted). Where such occurs, the invention of a process may be patentable despite the fact that the individual phases were known in the art."

encapsulating of aluminum foil within the thermoplastic extrusion was known. Finally, the apparatus used, a typical extrusion device, was also well known. What is contended to be at the core of the Fisch invention is a recognition of a problem of wrinkling of the foil within the encapsulating plastic, and solution of that problem by hitting upon the use of a certain lacquer as a thin coat or film upon at least one surface of the foil before introducing it into the extrusion apparatus.

The subject of appropriate prior art is in this case peculiarly complex. It is best dealt with by commencing with the prior art applied in the Patent Office.

As has been stated, there were four separate rejections before the Board of Appeals allowed the claims, the validity of which are challenged (Footnote 3, supra).

As the File Wrapper discloses, Claims 1, 2 and 3 of the patent in suit vary somewhat from the Claims originally submitted (PX-3, p. 12), which read as follows:

> 1. In the process of preparing an extruded thermoplastic product with at least one visible region having a metalic appearance, the steps comprising providing a metal foil comprising at least one layer of thermoplastic adhesive adapted to adhere to thermoplastic material to be extruded, and extruding a thermoplastic material about said foil while feeding the foil through the extrusion device with the surface of the foil containing the thermoplastic adhesive immediately beneath the extruded thermoplastic region which is to be provided with a metal appearance.
>
> 2. The process as set forth in claim 1 in which the metal foil is an embossed foil containing a multiplicity of facets adapted to reflect light in various directions.

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3. The process as set forth in claim 1 in which the laminated metal foil comprises an adherent layer of thermoplastic material on both sides thereof adapted to adhere to the thermoplastic material extruded on both sides.

To these on October 31, 1957, the Examiner responded, in pertinent part, as follows (PX-3, pp. 20-21):

> (7) Claims 1-4 are further rejected as being unpatentable over Flint, Duffy, Cook Jr. or Perzel. It would be obvious to one with ordinary skill to put an adhesive aid on the surfaces of the foils of either of the references wherever found necessary to get good adhesion, just prior to the steps of extruding an adhesive covering on a foil as shown by each reference. In any event Flint shows such use of an adhesion aid. It would also be obvious to impose whatever designs are desired to be seen upon a foil to be visible through a transparent covering such as shown by Flint. Apparatus limitations claimed, do not distinguish over the process of passing a foil through an extruder die, shown by the references.

By letter dated April 3, 1958, the applicant wrote in part as follows (PX-3, pp. 22-23):

> Reconsideration of the rejection of claims 1-4 as being drawn to the obvious method of making the article is requested. In the article, the adhesive coat could be applied first to the plastic portion or to the foil or as a separate extrusion layer, etc. Where at least three variations of a process are possible to produce an article, it is not seen that there is proper basis for deciding that the method suggested by applicant is the obvious one.

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Reconsideration of the rejection of claims 1-4 on Flint, Duffy, Cook, Jr., or Perzel is requested. None of the patentees have had the problem solved by applicant. All of these patents show the idea of extruding a thick metal strip (or fabric in the case of Cook) which is not capable of being crimped or bent by the plastic material extruded around the same. Adding an adhesive to the strips of Flint, Duffy, Cook or Perzel would have no effect on the extruded product. If it is attempted to incorporate a foil instead of a strip or fabric into the extrusion products of said references, the effect is not satisfactory because of the wrinkling of the foil. That this undesirable effect could be overcome by coating the foil with an adhesive is not obvious nor is it suggested by the references. Indeed one might logically conclude that quite the opposite effect would take place since the adhesive coating on the foil makes it more sticky and increases the friction of the foil against the sides of the passages through which it must be fed in the extrusion process. No idea of applying an adhesive is found in Flint. This latter patent does refer to a "sealing" liquid but this is not an adhesive. Instead it is a liquid adapted to seal the opening 34, 36 against admission of air to the interior of the plastic extrusion product. The acetone employed as the "sealing" liquid is not an adhesive.

Another Examiner then disallowed the claims on November 19, 1958, writing in part as follows:

Claims 1, 3 and 5 are rejected as unpatentable over either McCowen or Chadbourne, each alone or each in view of Shanok et al or vice versa. The

step of extruding a thermoplastic synthetic resin about an adhesive coated metal base is old in each of the primary references. A metal foil base specifically would be obvious in view of Shanok et al.

Claims 2 and 6 are rejected as unpatentable over the references applied above in the rejection of claim 1 in view of either Libberton or Degman who provide a corrugated metal core, note Fig. 8 in Libberton and Fig. 2 in Degman.

By Amendment filed May 11, 1959, the applicant amended the language of Claims 1 and 3 almost to what they now read and stated (PX-3, pp. 28-30):[5]

Reconsideration of the rejection of claims 1, 3 and 5 as unpatentable over McCowen or Chadbourne alone or in view of Shanok et al is requested. It is believed that this rejection depended more on an interpretation of the language of the claims than on an actual showing of applicant's process. The claims have accordingly been amended to more clearly define the invention. In McCowen a relatively stiff metal core is coated *by* extrusion and not *before* extrusion with a relatively *thick* layer of thermoplastic material. The process of this reference has no obvious application with foils. The preliminary coating applied by extrusion in the processes of McCowen is not for the purpose of providing

[5] The applicant's submission read (p. 1, lines 9-16):

When it was attempted to obtain a metal-like appearance in a plastic extruded product by embedding a metal foil therein, however, it was found that the inserted foil wrinkled so as to give the effect of an inferior product such as might be caused by distortion of the plastic or foil during extrusion or subsequent bending or flexing or by only loosely associating the foil with the plastic.

an adhesive for the next applied layer. The polyethylene of McCowen is at most translucent and it would be completely opaque with any substantial proporation of metal particles.

In McCowen the first layer 12 insulates the wire 1 from the metal containing layers 10 and 11. Chadbourne discloses a cable composed of composite strands each of which is coated with nylon (in Fig. 4, the only figure which applies to this case). Nylon being an opaque or at most translucent material is not covered by applicant's claims and it is obvious that patentee is not concerned with the problem of producing a product with a metallic aspect or in preventing wrinkling of the core material. In Chadbourne, the nylon coating 19 on the core strands 17 appears to be for the purpose of insulating the strands from each other and not to provide additional adhesion; nothing in the patent disclosure would lead one to believe that the coatings 14 and 24 of Figs. 3 and 5 are not just as adherent as the coating 20 of Fig. 4.

The process of Shanok et al is not essentially different from the process disclosed on page 1, lines 9-16. The problem of wrinkling of foil in such a process is an acute one which has not, to the best of applicant's knowledge, been solved by their competitors who use the process disclosed in Shanok et al. It is not obvious from the disclosures of McCowen or Chadbourne to apply a thin film of adhesive to a thin metallic foil before extruding plastic about the same for the sole purpose of preventing wrinkling of the foil in the extruded product. The most obvious explanation of the cause of wrinkling is that it is due to the contraction of the embedding plastic during cooling. Coating the

> foil with adhesive does not change the co-efficient of expansion of the plastic in the least but it does prevent wrinkling. It is submitted that this is a rather remarkable result which could not be predicted from a study of all of the references of record. [emphasis in original]

On February 23, 1960, another Examiner rejected the application, stating (PX-3, p. 32):

> Claims 1, 3, 5 and 7 are rejected as unpatentable over either McCowen or Chadbourne, each in view of Shanok et al. The steps as claimed are clearly old in each of the primary references. Nylon surface (19) in Chadbourne and coating (12) in McCowen constitute a coating prior to the extruded coat. Chadbourne also feeds a metal core through the extrusion device. A metal foil core is deemed an obvious modification in view of Shanok et al.
>
> Claims 2 and 6 are rejected as unpatentable over the references applied above in the rejection of claim 1 in view of either Libberton or Degman for the reasons of record.

Again, on August 11, 1960, applicant requested reconsideration of the rejection, distinguishing McCowen and Chadbourne as involving a cable as a core material, and thus not presenting the problems of extrusion of a thin foil. In McCowen, the pre-coated cable is embedded in plastic by a laminating process in which preformed sheets are pressed against the pre-coated core. As to Chadbourne, which discloses a process in which cable strands are precoated with nylon, the core material is pulled through a nozzle at a faster rate than the nylon coating is extruded so that the nylon is stretched in the process, thereby improving adhesion. The foil of the Fisch patent could not

be used as the core in Chadbourne's process. Moreover, Chadbourne does not show any method of avoiding wrinkling during the precoating operation.

Applicant also reiterated its basis for distinguishing Shanok.

On May 26, 1961, another Examiner "finally" rejected Claims 1, 2 and 3 of the Fisch application "as unpatentable over Shanok et al in view of McCowen or Chadbourne. . . ." (PX-3, p. 52).

On November 16, 1961, the applicant filed another amendment, for the first time referring to a "thin, film-like coating of a transparent thermoplastic lacquer of the group consisting of cellulose nitrate, celloulose butyrate, ethyl cellulose, and polyvinyl acetate-polyvinyl chloride lacquers on at least one surface thereof. . . ."

The amendment letter referred to a conference on October 3, 1961, between the applicant's representatives and the Examiner, at which applicant demonstrated the strength of the bond obtained between the foil and the plastic covering was demonstrated and compared with the lack of bonding between foil and plastic obtained by the conventional extrusion process.

On November 28, 1961, the Examiner denied entry to the November 16, 1961, amendment (PX-3, p. 64), and thereafter the applicant appealed to the Board of Appeals. It rewrote Claims 1 and 3 to their present form and, in its Brief, stated (PX-3, p. 71):

> . . . This invention is based on the discovery that the embedded foil may be made to adhere to the inner wall of the thermoplastic material which is extruded around the same if the foil is first coated with a thin layer of a transparent thermoplastic lacquer. When a foil coated with a thin layer of transparent, thermoplastic lacquer is extruded with a thermo-

> plastic material, almost instant adhesion between the foil and the thermoplastic extrusion material takes place on contact and the foil is bonded within the extrusion product in permanent, wrinkle-free condition. The bond between the foil and the thermoplastic is not disturbed by cutting or bending the product.

Applicant once again distinguished Shanok, Chadbourne and McCowen. In view of defendant's reliance upon Shanok as prior art in this suit, the applicant's statement to the Board of Appeals on Shanok is set forth in full, as follows (PX-3, pp. 75-8):

> Shanok et al does not disclose any particular extrusion steps or apparatus and his product cannot be any better than the product obtained by conventional extrusion processes. The showing of the cross-section of patentees antenna in the drawing thereof is an idealized or, at most, a diagrammatic showing. In actual practice, there is always a layer of air between the uncoated foil and the thermoplastic material surrounding the same in any such product prepared by conventional extrusion methods. At the interview with the Examiner referred to in the amendment of November 9, 1961, it was demonstrated that the non-coated foil embedded in plastic by conventional methods was clearly not adhered to any surface of the plastic and that it could be readily stripped from the surface thereof once a portion of the plastic is removed to permit access to the foil. On the other hand, it was shown that applicant's foil, coated on one side with the lacquer, could not be removed from the plastic to which this side is adhered. It was also demonstrated that

neither cutting or bending even the complex shapes of composite extrusions made by applicant's process does not cause separation of the foil from the plastic.

What applicant obtains by the lacquer coating and one extrusion cannot be obtained by two extrusions or two plastic molding steps such as shown by McCowen and Chadbourne. Consider the prior art specimen of Exhibit A of applicant's affidavit filed with the amendment of August 29, 1960, for example. What possible good could be accomplished by extruding or pressing another layer of thermoplastic over the thermoplastic layer of this Exhibit. Extruding just does not produce a union between the plastic and the foil.

In embedding a foil in a plastic, it must be remembered that the foil is easily bent, wrinkled or torn and is of limited tensile strength; it cannot be pulled through the extrusion orifice (as is the wire of Chadbourne) and it cannot be subjected to pressure from the plastic during or prior to extrusion. It is indeed surprising to find that applicant's lacquer-coated foil is adhered to the surrounding plastic throughout its entire lacquer coated surface. It is believed that an expert in plastic extrusions might predict that the lacquer-coated foil of the present invention would unite with the plastic extruded around the same at certain spaced areas but he would not predict that it would solve the problem presented by the defects shown in Exhibit A. The tenacity with which the foil is held by the plastic (as demonstrated to the Examiner) is not predictable and it is well known that a composite product with adhering layers has superior mechanical properties to a composite product in which the layers do not adhere to each other.

* * *

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None of the references disclose the essential feature of applicant's process or product, the lacquer-coated foil. Applicant's requirement of the lacquer coated foil is an unusual, unobvious and significant extra step when considered with extrusion processes and products. Yet this step, which is not shown in the prior art, provides a most unusual and advantageous result and solves the problem of film wrinkling while at the same time producing a product with better mechanical properties due to the strong adhesion between the foil and the surrounding plastic.

The Examiner's Answer relied upon only two references, Chadbourne and Shanok, and stated the invention as follows (PX-3, p. 84):

> The invention herein resides in the fact that in the prior art some thermoplastic materials when extruded about a metal foil do not adhere well thereto. The lack of adhesion in certain areas results in wrinkling of the foil when the plastic contracts. Additionally, working the extrusion coated article results in rupture of whatever bond there is between the plastic and foil.
>
> Apparently, the lack of adhesion is due to a residual oil film on the foil which the thermoplastic fails to penetrate. See specification, page 3, last paragraph, page 4, first paragraph. The alleged invention herein is deemed to be in discovering a specific group of thermoplastic coatings which do penetrate the residual oil film and bond well to an aluminum foil as well as to a specific thermoplastic surface coating, or main body, namely, cellulose acetate.

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Thereafter, the Examiner specifically and analytically detailed why Shanok and Chadbourne made the Fisch invention obvious (PX-3, pp. 84-89).

The Board of Appeals stated (PX-3, pp. 102-103):

> The subject matter of the contended invention relates to a composite extrusion product of thermoplastic material and metal foil and to the process of producing it. The process involves coating a metal foil with a thin film of a transparent thermoplastic lacquer which serves as an adhesive layer between the foil and the thermoplastic material and which is particularly useful in overcoming nonadherence of the thermoplastic material due to the presence of residual amounts of lubricants or oil on the surface of the foil.

Dealing with "Claim 11" (now Claim 1 in suit) the Board stated (PX-3, p. 103):

> Claims 2 and 11 to 14, directed to the process, stand rejected as being unpatentable over Shanok et al. in view of Chadbourne. We have carefully considered the Examiner's views, but we will not sustain this rejection. Neither one of these references nor their combination discloses extruding a thermoplastic material about a lacquer coated foil for the purpose of solving the problems of nonuniform adhesion and wrinkling.

Thereafter the patent issued, with twenty prior art references, including Shanok and Chadbourne, listed (PX-1, Col. 6).

The issue of obviousness is thus refined as follows: whether the use of a lacquer coated foil (encapsulated within a thermoplastic material) for the purpose of solving

the problems of nonuniform adhesion and wrinkling is unobvious?

Defendant argues that the presumption of validity is weakened or destroyed in that the Patent Office failed to cite the most pertinent prior art. More specifically, defendant states that Chadbourne and Shanok miss the mark in that there is no disclosure in Chadbourne of the use of an adhesive lacquer of the types claimed in the suit patent for bonding a thermoplastic material to a metal foil; and there is no disclosure in Shanok of the use of an adhesive lacquer for bonding the metal foil and the thermoplastic. Defendant then states that its prior art is of more pertinence than Shanok and Chadbourne.

Fundamental to defendant's prior art argument is its statement, with which I shall now deal, that the wrinkling problem met by the Fisch invention was actually a problem of delamination in which the aluminum foil and the transparent thermoplastic material came apart after completion of the extrusion process. Accordingly, to adhere these elements better to each other, defendant argues, it was obvious to use an adhesive to glue them together; and defendant sees this as so clearly indicated that it makes the contention initially even without specific prior art support.

Yet this seemingly simple point was considered in the Patent Office. Indeed, in the first rejection, the Examiner said (PX-3, p. 20): ". . . It would be obvious to one with ordinary skill to put an adhesive aid on the surfaces of the foils of either of the references wherever found necessary to get good adhesion, just prior to the steps of extruding an adhesive covering on a foil as shown by each reference . . ." (citing patents of Flint, Duffy, Cook Jr. and Perzel). Indeed, over six years various Examiners considered and applied some twenty prior art references,

which included prior patents in the fields of plastics lamination and bonding and plastics extrusion.

Included as cited prior art was the Heaton patent (PX-4, tab O) which disclosed the use of nitrocellulose, one of four lacquers named in the Claims in suit, as an adhesive for bonding polyethylene to a fiber base. After an early rejection, the Examiner decided apparently that defendant's prior art adhesive theory was without merit, or at least was of less merit than the prior art represented in Shanok and Chadbourne.

The Board of Appeals, however, approved the process claims of the patent in suit because none of the prior art references disclosed "extruding a thermoplastic material about a lacquer coated foil for the purpose of solving the problems of non-uniform adhesion and wrinkling." (PX-3, p. 103).

The simplicity inherent in hindsight is often misleading.

> It is well settled that in retrospect the most creative developments often appear commonplace. The critical question is whether at the time of invention the subject would have been obvious to one skilled in the art. *Columbia Broadcasting System* v. *Sylvania Electronic Prod. Inc.*, 415 F.2d 719, 728 (1st Cir. 1969), *cert. denied*, 396 U.S. 1061 (1970).

Defendant's argument overlooks that the thermoplastic material used in the extrusion process itself had adhesive tendencies. It is understandable why one skilled in the art might not find it obvious to use in addition an adhesive to resolve the wrinkling problem. *Cf.* Def's Post-Trial Brief, p. 35.

Significant too in the overall are the conditions under which the patented process is carried out: A temperature of about 400 degrees, and at a speed that allows less than

one-half second for the hot molten thermoplastic material to make contact with the aluminum foil. Thus, the wrinkling or delamination problem was solved in the context of thermoplastic extrusion as a *process*. The problem was not simply how to prevent wrinkling or delamination in a product but, instead, how to prevent it by a manufacturing process occurring in an environment of a high speed hot melt extrusion process, inside an extruder having the temperature of an oven, followed by a suddenly tremendous drop in temperature of over 300 degrees. The plaintiff's expert testimony leads me to conclude that the thin lacquer film somehow, in the brief time before the foil and the thermoplastic pass through the die opening, forms into a bond between the foil and the hot molten thermoplastic.

It is also understandable that a person skilled in the art would not readily come to the conclusion that an adhesive would eliminate the wrinkling problem in view of the tremendous stresses set up in the extrusion process, and in the bending and flexing of the end product.

In testimony I credit and accept, Professor Bruins, plaintiff's expert, testified that it was surprising and amazing that a strong bond was formed under the conditions of the patented process. He also pointed up the unusual stresses involved: On cooling, the coefficient of shrinkage of the thermoplastic is four to seven times greater than the coefficient of shrinkage of the aluminum, creating substantial stresses between the thermoplastic material and the foil as the thermoplastic extrusion is quenched and cooled (Bruins Tr. 270-272).

Professor Bruins also testified that, when the thermoplastic extrusion is bent or flexed, a substantial stress is created between the thermoplastic material and the foil and that "it is very amazing and surprising that after bending the product made by the patented process no wrinkling occurs" (Bruins Tr. 273-274).

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The patented process did not come about readily or easily. Indeed, over 18-months plaintiff tried many solutions. These as set forth in Plaintiff's Post-Trial Brief, p. 37, were embodied in testimony which I find credible and accept:

> Air and volatiles were evacuated from the crosshead to try to draw the hot, melted thermoplastic into closer contact with the foil (Rothman Tr. 95-96). Quenching with hot water to relieve strains set up in the cooling and quenching with cold water to create a strain and to improve the bond between the foil and the thermoplastic were also tried (Rothman Tr. 97-98). The foil was treated with a flame to try to burn off residue which might be on the foil and might interfere with the bonding and, at the same time, heat the foil to a temperature which might be more compatible to creating a bond between the thermoplastic material and the foil (Rothman Tr. 98). The extruding temperature was changed to lower the viscosity of the plastic so that the thermoplastic material might flow around the foil, would be softer and might adhere better to the foil and form a better bond (Rothman Tr. 99). Attempts were made to use annealed foil to get a better bond of the plastic to the foil (Rothman Tr. 99). The surface of the foil was even roughened with a wire brush in an attempt to form a mechanical bond between the thermoplastic material and the foil (Shapiro Tr. 459).
>
> • • •
>
> Other obvious expedients tried at the time proceeded along the opposite course by providing slippage between the metal foil and the thermoplastic material to avoid wrinkling. Thus, a lubricant was applied to the foil (Rothman Tr. 96-97) and two

foils, in face to face contact to slip on each other, were tried (Rothman Tr. 99-100). These efforts also failed.

Defendant's simplistic approach also omits to mention that the process in suit explicitly refers to specific lacquers; and it is clear that there is no statement in any prior art that these four specifically referred to lacquers would solve the wrinkling problem. The skilled person in the pertinent are would be confronted by hundreds, if not thousands, of adhesives, differing as to characteristics affecting their bonding ability. *See* Skeist Tr. 826-32.

Also persuasive is the testimony by Jesse Shanok and Victor Shanok, inventors of the prior art Shanok patent heretofore discussed. They were of better than ordinary skill in the thermoplastic extrusion art. They testified that their customers complained that the plaintiff's product was superior to theirs. Their efforts, from 1957 to 1959, to ascertain the reason for the difference, were unsuccessful. Then they discovered where Anchor Plastics was obtaining its lacquer coated foil, purchased some foil from that source (Singen), and used the foil in their process. They took a license under the patent in suit.

I thus conclude that, absent covering prior art, it was not obvious to the person of ordinary skill in the pertinent art to apply one of the Fisch lacquers to the foil of the Shanok process patent prior to introducing the foil into the extrusion apparatus.[6]

Defendant prior to trial had cited some ninety prior art references. At trial it relied upon ten of them.

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[6] The Board of Appeals, when it considered the patentability of the Fisch application, had before it the entire file of the Fisch application. The Board did not ignore the significance of the thermoplastic adhesive lacquer. (PX-3, pp. 102, 103).

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It relied upon Nadeau not only for its § 102 defense but also of its § 103 defense of obviousness. As has been previously stated, Nadeau is concerned with the process of making a printing plate in which various layers of material are applied at room temperature and then acid treated, etched and sensitized. The only extrusion in Nadeau is concerned with room temperature extrusion rather than hot melt thermoplastic extrusion. There is no simultaneous passing of any aluminum foil through a die opening. The Nadeau disclosure is not in the art to which the subject matter of the invention here in suit pertains, i.e., the art of thermoplastic extrusion processes and products produced by such processes, but in the photographic or printing art. Even assuming that the man of ordinary skill in the thermoplastic art conceivably is chargeable with knowledge of prior art in the photographic or printing art, it cannot be said that Nadeau teaches anything of value in hot melt extrusion under the conditions obtaining in the Fisch process. Finally, Heaton, which was before the Patent Office, is of more pertinence than Nadeau to the bonding problem which Fisch is said to have resolved. The presumption of validity is thus not overthrown by Nadeau.

Defendant also cites Shanok as pertinent prior art, in conjunction with certain publications, including an Alcoa article (DX-X), arguing that the publications embody lists of obvious adhesives "that one would select and try in the process disclosed by the Shanok patent (DX-Q) to solve the separation problem . . ." (Def't Post Trial Brief, p. 21).[7]

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[7] Defendant's citing of Shanok and the aforesaid publications are referred to by plaintiff as defendant's "prior art adhesive theory." Actually I have dealt with this theory in discussing the treatment accorded the application in the Patent Office.

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The Alcoa article deals with laminating of sheets and wraps. My own analysis of this article leads me to credit and accept the testimony of plaintiff's expert (Bruins Tr. 432):

> This article deals entirely with the subject of lamination and gives no advice on how to make an extruded product containing aluminum foil.

Moreover, as the same expert pointed out, wrinkling is mentioned in the Alcoa article in connection with hot melt adhesives. Thus, as is stated, if hot melt adhesives are applied to aluminum foil, the article teaches that you will have wrinkling rather than avoiding it, causing said expert to state (Bruins Tr. 431):

> If the hot melt adhesive were applied to the aluminum it would cause it to be expanded, due to the higher temperature, and if you now combined it with a cold sheet in laminating, you would get wrinkling.

The next of the nine prior art references relied upon by defendant is the Modern Packaging article entitled "Aluminum Foil" (DX-Z), which, like the Alcoa article, deals with laminating sheets and wraps, and not with the extrusion process. The article refers to laminating plastic films with aluminum foil and the necessity of selecting the proper adhesive therefor. This prior art is, once again, offered as part of defendant's "prior art adhesive theory" and thus is covered by what I have hereinabove stated with respect thereto, particularly as this theory was treated in the Patent Office. I regard neither this article, nor the Alcoa publication, as being more pertinent than that considered by the Patent Office.

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The next of the defendant's prior art references is the "Paper, Film & Foil Converter" article (DX-BV). This article is concerned with methods of application and coating techniques to aluminum foil. In the extrusion process described in this article, a sheet of polyethylene is first extruded and the extruded sheet is then brought into contact with the foil, but the foil does not pass through the extruder at all (Bruins Tr. 435-436). There is no mention of a wrinkling problem, much less the answer to the problem. Defendant also relies on this prior art for its disclosure of adhesives to be used with aluminum foil. Again, however, it is for this purpose not as pertinent as that before the Patent Office. As for the extrusion process discussed, this item of prior art is less pertinent than Shanok.

The next article relied upon by defendant as prior art is the Bell System Cable Sheath article taken from "AIEE Transactions" (DX-CG) and is concerned with a telephone cable. Dr. Skeist, defendant's expert, testified that the aluminum in the production of the cable goes through an extruder crosshead (Skeist Tr. 641) but, as is clear from the article's pictures, even if this does occur, the aluminum is corrugated and a part of the cable assembly. Dr. Skeist was unable to state whether there is anything in this article that discusses a wrinkling problem and, as plaintiff points out, there is none (Skeist Tr. 819). There is no contact between the foil and thermoplastic inside the die as required in the Fisch process. Professor Bruins, plaintiff's expert, testified that the polyethylene makes contact with the aluminum foil outside of the die because "the polyethylene is applied over the cable" and is drawn down or shrunk onto the cable (Bruins Tr. 858-859). There is mention that "flooding of rubber thermoplastic cement applied over the aluminum forms a bond between the aluminum and polyethylene." This, however, again offered

under defendant's "prior art adhesive theory," is far less pertinent than the art considered, and ultimately rejected, in the Patent Office.

The next prior art reference relied upon by defendant is Shanok et al. United States patent 3,245,864 (DX-BG). Defendant has also cited Shanok et al. United States patent 2,774,811 (DX-Q) which was fully considered by the Patent Office. There is no suggestion of a wrinkling problem in either of these patents nor the solution of such a problem (Bruins Tr. 434). The fact that the inventors and patentees of these two patents tried unsuccessfully to find out why the product of the process of the Fisch patent was superior and that they switched to the process of the Fisch patent and took a license in that patent has been previously discussed.

Defendant next cites as prior art the Campbell patent (DX-AD). This patent relates to a vinyl resin coating composition, and does not suggest an extrusion process, or a thermoplastic extrusion process in which a hot melted thermoplastic material and a metal foil are extruded through an extrusion die to encase the metal foil in the extruded thermoplastic. This patent also relates to lacquers, as follows (p. 4, lines 26-29):

> ... Thus, clear lacquers containing the modified resin may be employed either as an air-drying or baked coating for aluminum and other metal foils used in packaging food products....

Once again, this prior art adhesive reference is not nearly as pertinent as that considered by the Patent Office and rejected.

Sturdevant (DX-AN) and Cox (DX-AE) are both concerned with vulcanizing rubber compositions to metallic surfaces, such as solid metal conductors in electrical wires. There is no mention of wrinkling in either of these refer-

ences, nor do they suggest extruding a transparent thermoplastic material in unison about a metal foil coated with a film-like coating of the four transparent thermosplastic lacquer materials named in the Fisch patent. As defendant's expert testified, rubber vulcanizing causes an irreversible chemical reaction, like a thermo-setting process rather than a thermoplastic process as is involved in the process in suit.

The defendant also relies upon a publication "Vinylite Plastics Elastomeric Compounds Bonding" (DX-AB). I find this prior art to be more remote than that utilized in the Patent Office, and as falling within that which has heretofore been categorized as defendant's prior art adhesive theory.

Because I find the prior art cited by defendant to be less pertinent overall than that referred to in the Patent Office, I do not perceive any diminution in the presumption of validity.

The prior art offered by defendant can thus be said to consist of several publications relating to bonding and adhesives and of Shanok and Chadborune, which teach the thermoplastic extrusion of a plastic encasing a foil uncoated with an adhesive, both of which patents were cited by the Patent Office. They of course do not reflect either the wrinkling problem or its solution.

The defendant has urged that the difference between Shanok and Chadbourne and the Fisch process, that is the solution to the wrinkling problem, would be obvious to one of ordinary skill in the extrusion art, because of the abundant mention of adhesives as contained in the several publications tendered herein by the defendant.

Non-obviousness, within the meaning of 35 U.S.C. § 103, means that the differences between the subject matter of the patent claim and the prior art relied upon are such that the subject matter of the patent claim, taken as a whole,

would not have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

Accordingly, under *Graham*, 383 U.S., at 17, the "level of ordinary skill in the pertinent art [is next to be] resolved." Pertinent is the following:

> In order to determine whether the claimed invention constitutes progress in a useful art for which the inventor is entitled to the reward of a patent, clause 8, § 8, art. 1, of the Constitution, we shall first inquire in what art the invention stands, and what arts, seemingly analogous or related, are outside its borders. This inquiry will be pursued along lines that distinguish not merely the physical differences in the arts but particularly the difference in their problems. *Radiator Specialty Co.* v. *Buhot*, 39 F.2d 373 (3d Cir. 1930)

The art, I fined, which is pertinent is the art of extruding a thermoplastic material about a metal foil. I do not accept the proposition urged by the defendant, that the level of ordinary skill is that of the experts called in this trial, Dr. Bruins and Dr. Skeist. From the proofs offered, I find that one of ordinary skill in the pertinent art would not have talents, as the experts did, in chemistry, or have knowledge of the many techniques applicable to the manufacturing of plastics, such as limitation. Moreover, even if his knowledge extended beyond the narrow confines of the extrusion art, I find he still would not have seen or heard any teaching or suggestion as to the solution of the wrinkling problem.

Accordingly, taking the defendant's starting point on obviousness, the Shanok and Chadbourne patents and adding to them the accretion of knowledge provided by defen-

dant's prior art adhesive theory, I find that the person of ordinary skill in the art would not have recognized that the problem of wrinkling, and distortion by bending stresses, could be cured by application to the foil of one of the lacquers included in the claims in suit.

Secondary Considerations

That the Fisch process was a valuable contribution to the art of thermoplastic extrusion about an aluminum foil is clear (*See* Shapiro Tr. 238-239). The application of lacquer is obviously a desirable step, and results in a product far superior to that of the Shanok patent. Evidence of this is found in the action of the Shanoks, when they discovered the source of the superiority of plaintiff's product. They ultimately took a license through Glass Laboratories, as did General Motors Corporation and Macoid Industries Inc.

Even more significant tribute is paid to plaintiff's process by that which is manufactured by defendant. Putting infringement questions aside for the moment, it is clear that defendant, coming into the extrusion field relatively recently in 1967, elected to manufacture and sell a product made by the accused extrusion process and using foil coated with VMCH lacquer. In this connection I find the following facts as set forth in plaintiff's Post-Trial Brief, at pp. 7-8:

> . . . In 1968, defendant experimented with extruding a thermoplastic product with foil which was not coated with a lacquer coating. Defendant decided not to produce and sell such a product extruded with unlacquered foil (Crystal deposition PX 15B, pages 10-11). This work was performed by Milton Crystal, a Dynex vice-president who was a former employee of plaintiff's licensee Glass Laboratories and also a former employee of plaintiff (Crystal deposition PX 15B, page 3; Rothman Tr. 137-139).

Instead, defendant then adopted the accused extrusion process using foil coated with VMCH lacquer (Crystal deposition PX 15B, pages 9-10, 55-57). It is described in detail in PX 11 and typical products of the accused process are in evidence as PX 13.

Defendant also hired Morton Hahn in October, 1968, then a salesman for plaintiff, Anchor Plastics, to sell the extruded thermoplastic product made by the accused process using VMCH lacquer coated foil (Crystal deposition PX 15B, pages 41, 45; Hahn deposition PX 15A, pages 7-10; Shapiro Tr. 444-448).

Defendant contended at trial that plaintiff actually uses a lacquer other than that taught by the patent. I find that this is not so. I find that plaintiff orders a vinyl chloride-vinyl acetate copolymer lacquer and that its materials are supplied under that designation (PX-23), and that there was no sufficient showing by the defendant to overthrow the inference I can and do draw that plaintiff uses a vinyl chloride-vinyl acetate copolymer lacquer, one of those taught in the patent. See *Hurwitz* v. *Shiu Yim Poon,* 364 F.2d 878, 888 (C.C.P.A. 1966).

The testimony of Dr. Skeist to the contrary was unconvincing. He concluded on the basis of his infrared test that plaintiff's lacquer contained vinyl chloride, vinyl acetate and a dicarboxylic acid and was therefore VMCH (Skeist Tr. 688-695, 749, 756-767). However, he was not an infrared expert (Skeist Tr. 750-753) and the test he ran was not a precise and scientific one (Skeist Tr. 767-772). Moreover, I found Dr. Skeist's testimony less acceptable than that of Professor Lewin, a highly qualified expert in infrared technique (Lewin Tr. 841-842; 848-849; 850-852).

By virtue of the foregoing I find the Claims in suit valid as embracing a non-obvious invention.

The Disclosure in the Patent Was Adequate Under 35 U.S.C. § 112

Section 112 provides:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Defendant contends that the specification of the patent in suit is defective in that it does not identify certain transparent thermoplastic materials which defendant contends would not work in the Fisch process. Defendant supported its position by the testimony of its expert, Dr. Skeist, who stated that the Claims in suit covered the use of any transparent thermoplastic material; but that on March 1, 1973, on the eve of trial, he had been unable to make polytheylene, polystyrene, or cellulose acetate work with VMCH lacquer coated aluminum foil (Skeist Tr. 653-664).

I reject Dr. Skeist's testimony and the conclusions he drew from his ex parte experiments. Starting with an evident bias (Skeist Tr. 784), he proceeded on a less than scientific basis using only three experiments, and the aforementioned three plastics, took only 20-30 minutes, and obviously made no earnest effort to succeed. *See* Skeist, Tr. 772-773; 775; 777; 778-779; 780-781; 782-784; 788-789; 790-791.

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Applicable is the following from *Ansul Co.* v. *Uniroyal, Inc.*, 448 F.2d 872, 878 (2nd Cir. 1971), *cert. denied*, 404 U.S. 1018 (1972):

> . . ."the necessity for conducting experiments or preliminary tests to determine the successful application of an invention * * * will not invalidate a patent provided one skilled in the art could determine and select the necessary experiments or tests without unreasonable difficulty.". . .

See also, Trio Process Corp., supra, 461 F.2d at 74; *Noll* v. *O.M. Scott & Sons Co.*, 467 F.2d 295 (6th Cir. 1972), *petition for cert. filed*, 41 U.S.L.W. 3510 (U.S. Mar. 20, 1973) (No. 72-1127).

It is clear to me from my analysis of the Skeist testimony as above referenced, and the testimony of Dr. Bruins, plaintiff's expert, that the patent sufficiently details the process in suit and does not place an unreasonable burden of experimentation on anyone who wishes to practice the invention.

Moreover, for the same reasons, as set forth under this subheading, I reject defendant's defense of overclaiming. Applicable is the following:

> The inventor is not to be deprived of the fruits of his labor by too technical a requirement of disclosure, and it is adequate for purposes of validity if his claims are sufficiently clear and exact to be understandable by those skilled in the relevant art. *Yosemite Chemical Co.* v. *United States*, 360 F.2d 948, 952 (Ct. of Cl. 1966).

Appendix A

Miscellaneous Defenses

a. *Plaintiff's Alleged Misconduct*

Defendant states:

> Plaintiff misled the Patent Office into granting the patent, and attempted the same tactic in this case, by pretending there was a wrinkling problem *during* extrusion, when delamination only occurred *after* the product was made. Def's Post-Trial Brief, p. 70) [Emphasis in original]

The charge of misconduct fails. *See* Rothman Tr. 168; 173-174.

Moreover, while I have hereinabove used wrinkling as if it were almost synonymous with delamination, the defendant's reference in the above quotation from its Brief suggests that it is appropriate to draw the line carefully between them. As plaintiff has contended, wrinkling can be and is caused by factors during extrusion and is not synonymous with delamination. Indeed, while the latter cannot occur given an adhesive, wrinkling can occur; and wrinkling can occur though there is no separation.

See also, Bruins Tr. 261; 270-272.

Dr. Skeist's testimony on this issue has been reviewed by me and rejected (Skeist Tr. 653; 670; 790).

I find no merit to defendant's charge of wrongdoing by Mr. Fisch or by plaintiff. The patent in suit fairly and correctly states that prior art attempts to extrude metal foil embedded in thermoplastic caused a wrinkling problem "by distortion of the plastic or foil during extrusion or subsequent bending or flexing" (PX-1, lines 24-26).

b. *Defense of Patent Misuse*

Defendant asserts that plaintiff misused the patent in suit by threatening a lacquer foil supplier named Strana-

han with notices of patent infringement. Defendant cites testimony of Mr. Shapiro, a memorandum (DX-KB) and a letter written by plaintiff's counsel (PX-24).

The defense is without merit. A patent owner has a right to notify persons suspected of infringement.

Infringement

Putting aside the question of the VMCH lacquer used by defendant, and the four lacquer films identified in the Claims in suit, there is detailed correspondence and congruence between the accused process, and the process of Claim 1 of the patent in suit. *See* Bruins Tr. 276-280; PX-15B, pp. 55-57; Skeist Tr. pp. 709-712. The issue of infringement thus comes down to whether defendant's VMCH lacquer is sufficiently unlike the Fisch process lacquers as to make for non-infringement.

Plaintiff contends (Proposed Fdg. of Fact 51):

> The essential sameness of VMCH and the "vinyl acetate-vinyl chloride copolymer lacquer" named in the Fisch patent in suit at line 16 of column 2 is demonstrated by the Union Carbide publications (PX 18, PX 21 and PX 23; DX AD).

VMCH, manufactured by Union Carbide, contains 86% vinyl chloride, 13% vinyl acetate, and 1% of maleic acid. Also manufactured by Union Carbide, and closely associated with it in that company's sale of resins, is VYHH, which is made of 87% vinyl chloride and 13% vinyl acetate, which of course is within the Fisch process' "vinyl acetate-vinyl chloride copolymer lacquer" grouping (PX-1, Col. 2). Thus, the only difference between VMCH and VYHH is that VMCH contains 1% maleic acid, with a corresponding 1% diminution in vinyl chloride.

Appendix A

Based upon the Union Carbide description of these products, and the analysis thereof by Dr. Bruins, which I accept, it is clear that the relative performances of VMCH and VYHH are equivalent and that the two products function in the same way to produce substantially the same result, except that "In adhesion to clean steel when it is already dried, VMCH is very good; VYHH is poor." (Bruins Tr. 283). From this plaintiff reasons VMCH is an equivalent to its claimed lacquers.

Defendant's expert, Dr. Skeist, testified that the extra 1% maliec acid in VMCH lacquer made it a terpolymer and hence different from VYHH, but that "the VMCH lacquer adhesively fixed the foil with respect to the extruded thermoplastic" (Skeist Tr. 712), language remarkably similar to that of Claim 1 in suit. The defendant concludes (Def's Post-Trial Brief, pp. 67-68):

> The claims in the suit patent all call for specific adhesives, none of which is used by defendant. One of the claimed adhesives is "polyvinyl acetate—polyvinyl chloride lacquer". However, the defendant obtains from its suppliers an aluminum foil coated with "VMCH", which is not one of the named adhesives, but, instead, is an interpolymerized *terpolymer* made from *maleic acid* and vinyl chloride and vinyl acetate. Thus, to prove infringement, plaintiff must prove that the patent claims are allowed a range of equivalents and are not limited to the claimed adhesives. The difference between the two materials may seem small, only 1% of maleic acid (Bruins, Tr. 281-282), but that small difference here suffices to prove non-infringement. The claims must be given an exact and limited scope without any range of equivalents and cannot encompass even a minor variation. Professor Bruins'

> testimony did not prove that VMCH was the same as polyvinyl acetate-polyvinyl chloride—but only that they were equivalent (Bruins, Tr. 284). [Emphasis in original]

Implicated is the doctrine of equivalents. *Graver Tank & Mfg. Co., Inc.* v. *Linde Air Products Co.*, 339 U.S. 605 (1950), provides:

> In determining whether an accused device or composition infringes a valid patent, resort must be had in the first instance to the words of the claim. If accused matter falls clearly within the claim, infringement is made out and that is the end of it. (339 U.S. at 607).

The doctrine of equivalents is founded upon the realism that, because subtle departures from a patented process or apparatus can be readily devised "to elude the reach of the patent's protection," *Ziegler* v. *Phillips Petroleum Co.*, —— F.2d —— (5th Cir. April 13, 1973), No. 71-2650, patentees must be protected from those minor changes in a patent which leave the patented matter performing the same function in substantially the same way to obtain the same result. *Graver Tank & Mfg. Co., Inc., supra,* provides (339 U.S. at 609):

> . . . [the equivalents doctrine] does not require complete identity for every purpose and in every respect. In determining equivalents, things equal to the same thing may not be equal to each other and, by the same token, things for most purposes different may sometimes be equivalents.

Under the doctrine of equivalents, a patentee of a pioneer patent, for example, one covering a function never

before performed, will be given broad protection. *Corning Glass Works* v. *Anchor Hocking Glass Corp.*, 374 F.2d 473, 476 (3d Cir.), *cert. denied*, 389 U.S. 826 (1967). *See also Hildreth* v. *Mastoras*, 257 U.S. 27, 36 (1921) ("As [plaintiff's] patent is a generic patent, the doctrine of broad equivalents properly applies here"). On the other hand, it follows that a patent on a device which is a mere improvement on prior art will receive a narrower construction under the equivalents doctrine.

The defendant here invokes the doctrine of File Wrapper Estoppel, contending that (Def's Post-Trial Brief, p. 68):

> . . . if an inventor gives up a broader claim in order to obtain a patent having a narrow and specific claim, he cannot later broaden the claim by resort to the doctrine of equivalents, even to encompass a minor variation, *International Latex Corp.* v. *Warner Bros. Co.*, 276 F.2d 557 (2nd Cir., 1960); *Exhibit Supply Co.* v. *Ace Patents Corp.*, 315 U.S. 126, 52 U.S.P.Q. 275 (1942); *Schmidinger* v. *Welsh*, 383 F.2d 455, 155 U.S.P.Q. 289 (3 Cir. 1967).

Factual support is drawn for this position from the File Wrapper (PX-3, pp. 20, 25, 32, 52, 55 and 58), which discloses the four separate rejections of the Fisch application, the amendment four years after filing to specify the four adhesives, including "polyvinyl acetate—polyvinyl chloride" (PX-3, p. 55), and the fact that the stated purpose of the amendment was "to avoid a rejection of too great breadth" (PX-3, p. 58).

Additionally, the defendant argues that the Campbell patent (DX-AD) shows that the addtion of 1% maleic acid to a vinyl chloride—vinyl acetate type adhesive cxeated "a patentably distinct invention." (Def's Post-Trial Brief, p. 683.

Defendant thus concludes its argument on this point by stating that because of the prior art and the Patent Office history, as aforesaid, the plaintiff "cannot expand the patent claims to cover materials, such as defendant's terpolymer VMCH *not* named in those claims." (Def's Post-Trial Brief, p. 68). [Emphasis supplied].

The recent case of *Ziegler* v. *Phillips Petroleum Co., supra*, slip op. pp. 20-21, provides as to File Wrapper estoppel:

> . . . A patentee's consent to the demands of the patent examiner, made to obtain his patent, operates as a "disclaimer," and he is thereafter bound by it. *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U.S. 211, 221-22 (1940); 4 Deller's Walker on Patents § 234 (2d ed. 1965).
>
> The mere surrender or amendment of a claim in the Patent Office does not, however, forever bar a patentee from asserting the doctrine of equivalents. He is estopped only from reclaiming what he surrendered. *Borg-Warner Corp.* v. *Paragon Gear Works*, 355 F.2d 400 (1st Cir. 1965). Hence it is necessary to determine what in fact the patentee gave up in order to receive its patent, *see Edward Valves, Inc.* v. *Cameron Iron Works, Inc., supra*, and what is the essence of the invention that remains. *U.S. Peg-wood Shank and Leather Board Co.* v. *Sturtevant Co.*, 125 F. 382, 384 (1st Cir. 1903). Moreover, an applicant should not be presumed to have made a disclaimer broader than necessary to yield to the actual challenge to his claim.

Against this background of legal principles I give the patent narrow protection since I do not regard it as a "pioneer" patent. I do not see anything in the history of

the Fisch application to indicate anything, and more specifically, VMCH, was surrendered; and there was of course no cancellation or amendment of a claim calling for VMCH. Finally, I find VMCH to be the equivalent under *Graver* of the "vinyl acetate—vinyl chloride copolymer lacquer" named in the patent in suit. I must and do reject the atatempted distinction by defendant's expert, founded upon the fact that VMCH is a terpolymer containing 1% maleic acid as a third repeating unit, as contrasted with the aforesaid lacquer of the patent which, according to Dr. Skeist, as a copolymer, would have two kinds of repeating units. Aside from the tenuous nature of this distinction, which at best is insubstantial (*See* Pff's Proposed Fdgs. of Fact 54 and Pff's Post-Trial Reply Brief, p. 55), there appears nothing in the record to distinguish the two lacquers in terms of what each accomplishes, and how it accomplishes what it does.

Accordingly, I find Claim 1 of the Fisch patent is infringed by defendant's process.

I make the same findings as to Claims 2 and 3 of the Claims in suit. As to Claim 2, defendant conceded that its foil is "coated on both sides with a VMCH lacquer" (PX-11), and the testimony of Mr. Salcer, defendant's president (PX-12), and Dr. Bruins (Bruins Tr. 288-290), establishes that plaintiff's Claim 3 in suit is infringed by defendant's "Foilastic." *See also*, Rothman Tr. 134-135; 143; PX-5D.

Conclusion

Based upon the foregoing, an appropriate form of judgment, final except for accounting [*see* 28 U.S.C. § 1292 (a)(4)], shall be submitted not later than June 28, 1973, in favor of the plaintiff and against the defendant, covering the relief sought. Trial shall proceed on the damages

issue at the next term of court unless stayed pending appeal. The damages recoverable may include, if the court trying same finds it appropriate, costs such as trial transcript required by me to afford reference to the record on submissions of Proposed Findings of Fact and Conclusions of Law. For guidance only, and expressly stated as not intended to be binding, I record by impression that this case is not an exceptional case within 35 U.S.C. § 285 as to call for attorney fees.

FREDERIC B. LACEY
U.S.D.J.

Dated: June 25, 1973

APPENDIX B

Judgment and Permanent Injunction Order

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW JERSEY

Civil Action No. 1495-69

ANCHOR PLASTICS COMPANY, INC.,

Plaintiff,

v.

DYNEX INDUSTRIAL PLASTICS CORP.,

Defendant.

This cause having come on to be heard upon the pleadings and proofs and having been fully argued by the parties, upon full consideration thereof it is,

ORDERED, ADJUDGED AND DECREED:

1. That the plaintiff Anchor Plastics Company, Inc. is the owner of United States Letters Patent No. 3,136,676 and entitled to the inventions claimed therein and all rights and privileges thereunder.

2. That claims Nos. 1-3, inclusive, of said United States Letters Patent No. 3,136,676 are good and valid in law.

3. That the defendant Dynex Industrial Plastics Corp., a corporation of the State of New Jersey, has since the issuance of said United States Letters Patent, within the judicial district of the United States District Court for the

District of New Jersey and elsewhere, infringed claims Nos. 1-3, inclusive, of said patent by using the processes of such claims to make thermoplastic extruded products having embedded therein metal foil coated on at least one of its sides with a thermoplastic lacquer which extruded products defendant has used and sold.

4. That the defendant Dynex Industrial Plastics Corp., William Z. Salcer, its President, and its other officers, servants, agents, and employees acting on its behalf, and all persons, firms and corporations claiming by, through or under it, be and each and every one of them are hereby permanently enjoined and restrained for the remainder of the term of said patent from infringing, practicing or using or from actively causing or inducing others to infringe, practice or use the processes covered by the claims of United States Letters Patent No. 3,136,676.

5. That the plaintiff have and recover from the defendant Dynex Industrial Plastics Corp. the damages which plaintiff has suffered, adequate to compensate for the infringement which shall be determined pursuant to the provisions of 35 U.S.C. 284 and that trial shall proceed on the issue of the amount of such damages at the next term of this Court.

6. That the plaintiff have and recover its costs and taxable disbursements to date from the defendant Dynex Industrial Plastics Corp.

/s/ FREDERICK B. LACEY
United States District Judge

Dated: June 28, 1973

APPENDIX C

Judgment Order

UNITED STATES COURT OF APPEALS

FOR THE THIRD CIRCUIT

No. 73-1806

ANCHOR PLASTICS COMPANY, INC.

v.

DYNEX INDUSTRIAL PLASTICS CORP.,

Appellant.

(D. C. Civil No. 1495-69)

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEW JERSEY

Argued February 14, 1974

Before VAN DUSEN and ADAMS, *Circuit Judges*, and NEALON, *District Judge*

HARVEY E. BUMGARDNER, JR., Esq., ARTHUR, DRY & KALISH, New York City, N. Y.

ELLIOT S. GERBER, Esq. and DOUGLAS W. WYATT, Esq., WYATT, GERBER & SHOUP, New York City, N. Y.

Attorneys for Appellant

Appendix C

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WILLIAM H. HYATT, JR., Esq., PITNEY, HARDIN & KIPP, Newark, New Jersey
Attorneys for Appellee

After consideration of all contentions raised by defendant-appellant, it is

ADJUDGED AND ORDERED that the June 28, 1973, judgment of the district court be and hereby is affirmed. Costs taxed against appellant. See *Anchor Plastics Co., Inc.* v. *Dynex Industrial Plastics Corp.*, 363 F. Supp. 582 (D. N. J. 1973).

By the Court:

VAN DUSEN
Circuit Judge

Attest:

THOMAS (Illegible)
Clerk

Dated: February 22, 1974

APPENDIX D

UNITED STATES COURT OF APPEALS

FOR THE THIRD CIRCUIT

No. 73-1806

ANCHOR PLASTICS COMPANY, INC.

v.

DYNEX INDUSTRIAL PLASTICS CORP.,

Appellant.

SUR PETITION FOR REHEARING

Present:

SEITZ, *Chief Judge*, and VAN DUSEN, ALDISERT, ADAMS, ROSENN, HUNTER, WEIS and GARTH, *Circuit Judges.*

The petition for rehearing filed by Appellant in the above entitled case having been submitted to the judges who participated in the decision of this court and to all the other available circuit judges of the circuit in regular active service, and no judge who concurred in the decision having asked for rehearing, and a majority of the circuit judges of the circuit in regular active service not having voted for rehearing by the court in banc. the petition for rehearing is denied.

By the Court,

VAN DUSEN
Judge

Dated: March 25, 1974.

APPENDIX E

Statutes Involved

(United States Code Title 35—Patents)

SECTION 101. Inventions patentable.

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

SECTION 102. Conditions for patentability; novelty and loss of right to patent.

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United

States before the invention thereof by the applicant for patent, or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

SECTION 103. Conditions for patentability; non-obvious subject matter.

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

SECTION 112. Specification.

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it it most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Appendix E

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.